3009422
SONY BDA
3-860-610-21 (1)

SONY

Color Video Printer

Instructions For Use Page 2

Before operating this unit, please read this manual thoroughly and retain it for future reference.

Mode d'emploi Page 90

Avant la mise en service de cet appareil, prière de lire attentivement ce mode d'emploi que l'on conservera pour toute référence ultérieure.

Gebrauchsanweisung Seite 178

Bevor Sie dieses Gerät verwenden, lesen Sie diese Anleitung bitte sorgfältig durch, und bewahren Sie sie für später zum Nachschlagen auf.

CE

UP-2100P

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English

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

This symbol indicates the equipotential terminal which brings the various parts of a system to the same potential.

For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection agaist harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

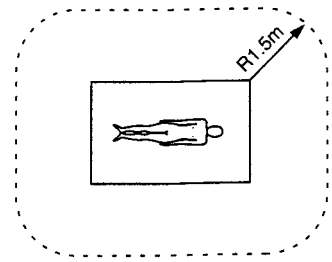
You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.
This device requires shielded interface cables to comply with FCC emission limits.

For the customers in Europe

Important safequards/notices for use in the medical environments

1. All the equipments connected to this unit shall be certified according to Standard IEC601-1, IEC950, IEC65 or other IEC/ISO Standards applicable to the equipments.
2. When this unit is used together with other equipment in the patient area*, the equipment shall be either powered by an isolation transformer or connected via an additional protective earth terminal to system ground unless it is certified according to Standard IEC601-1.

* Patient Area



3. The leakage current could increase when connected to other equipment.

4 This equipment generates, uses, and can radiate frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause interference to other equipment. If this unit causes interference (which can be determined by unplugging the power cord from the unit), try these measures: Relocate the unit with respect to the susceptible equipment. Plug this unit and the susceptible equipment into different branch circuit. Consult your dealer.

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About This Manual

This manual is divided into four chapters. This section explains the organization of this manual.

Introduction
Describes the features and system configuration of the color video printer.

Operation
Describes actual printing once all connections and adjustments have been made, as explained in the next chapter. You will be able to make various types of printouts after reading through this chapter.

Installation and adjustment
Describes how to make connections and make adjustments using the menus displayed on the video monitor. Once all connections and adjustments have been made, there should be no need to perform these operations again during normal printing operations. These operations must, however, be performed after reinstalling, or if the picture quality degrades, or if adjustment becomes necessary because the peripheral equipment is changed. Also covered is the use of the printer's remote control unit (not supplied).

Others
Notes the precautions to be observed when using the printer, lists errors, warnings and their handling, and explains troubleshooting. Also provided is information on the locations and functions of parts and controls, and the on-screen messages and menus used to operate the printer. Should you encounter any unfamiliar terms or items while reading this manual, consult the index at the end of the manual.

Conventions used

Cross references
Throughout this manual you will find references to other sections of the manual that contain related information.

Important note
Be sure to read the sections of the manual marked **Note**. They explain points that you should be aware of to operate the printer correctly and prevent malfunctions.

Index
Use the index, in addition to the table of contents, to find information you need when using the printer.

Monitor displays
Some monitor displays illustrated in this manual may differ slightly from the acutal display. The operation of the printer, however, remains as described in this manual.

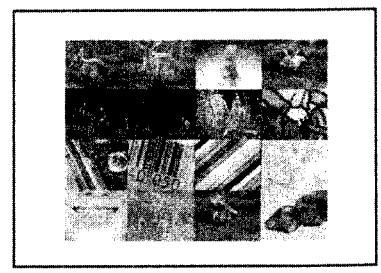
System Overview

The UP-2100P color video printer is designed for capturing images from video equipment such as VTR and for printing out high-resolution images, either in 256 shades in full color (about 150 dpi). You can make various types of printouts. You can also add a caption onto the printout. You can operate the daily printer operation by using the buttons and setup the printer interactively by picking from displayed menus.

Printouts that can be made with the printer

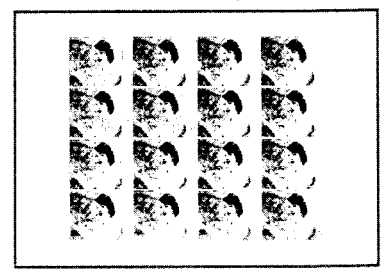
Printout of a full-size image (page 15)

Printout of 16 reduced images (page 29)

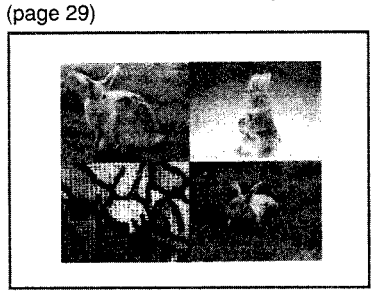


Printout of two reduced images Capturing the center of the screen (page 29)

Printout of identical images (page 38)



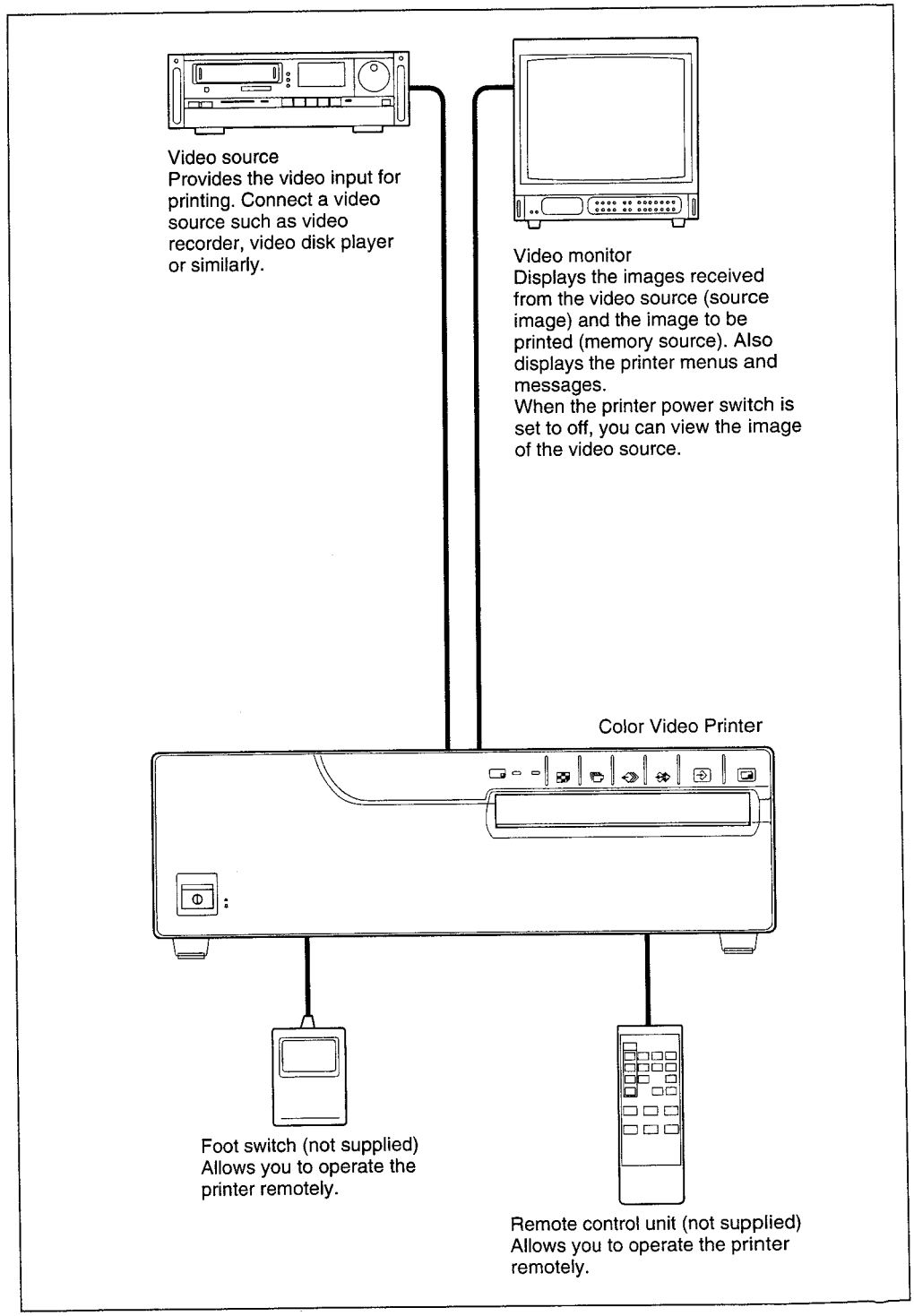
Printout of four reduced images (page 29)



In addition to the above printouts of multiple reduced images, printouts of multiple reduced images with white borders can be made.
You can add a caption onto printouts introduced here.

System Configuration

The following shows an example printer system configuration.



Before Printing

This section describes the following operations that must be made prior to starting printing after mounting the paper tray and paper cover on the printer and making the necessary connections.

- Loading an ink ribbon cartridge (see below)
- Loading paper (see page 11)
- Selecting the input signal (see page 13)

Once the above operations have been completed, there should be no need to repeat them during routine printing. Perform them only when absolutely necessary.

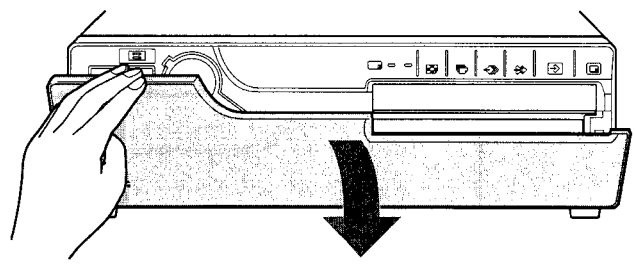
Loading an Ink Ribbon Cartridge

To make printouts, an ink ribbon cartridge and paper (which are compaticble) must be loaded.
If the printer detects an incompatible combination, an error message appears.
Use the ink ribbon cartridge and print paper (supplied) to check if the video printer functions properly.

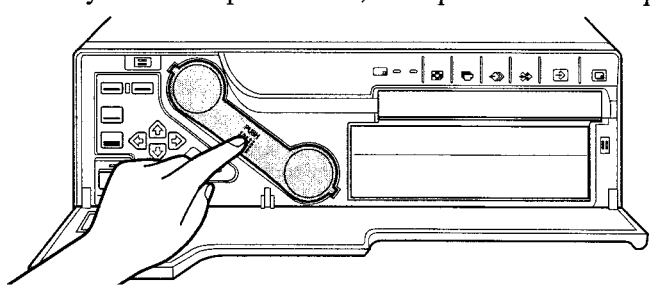
Notes

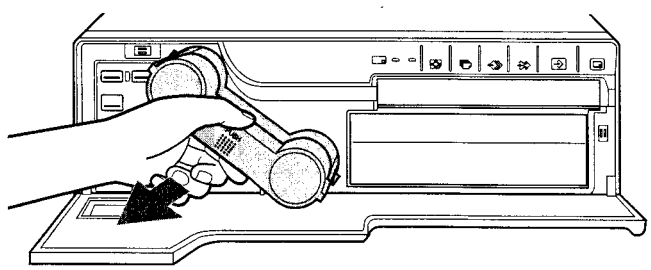
- Use only ink ribbon cartridge and paper "UPC-2010 Color Printing Pack", that are designed for use with this printer. Failing to do so is likely to result in unsatisfactory printing or malfunctions.
- When replacing the ink ribbon cartridge, do not turn off the power. Turning off the power will cause the image stored in the memory to be lost.

1 Open the front panel by pulling the front panel top toward you.



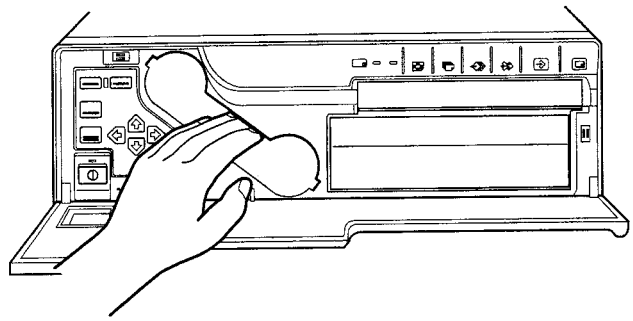
2 Remove the ink ribbon cartridge by pushing the ink ribbon cartridge itself.
The ink ribbon cartridge pops out.
When you use the printer first, this operation is not required.





Note

Never put your hand into the ink ribbon compartment. The thermal head becomes very hot. You may burn yourself if you touch it.



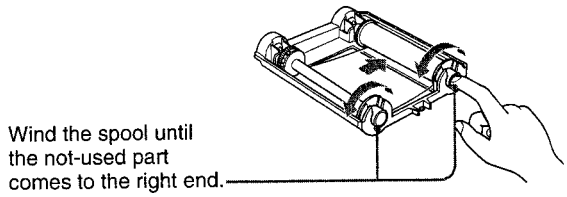
When the ink ribbon cartridge cannot be ejected

Turn the power off, then back on again. Then, after a while, press the ink ribbon cartridge.

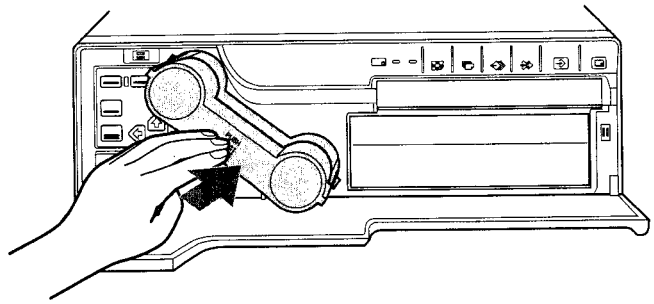
In this case, the image in memory will be lost.

3 Remove any slack from the ink ribbon.

If the ribbon is left slack, it may be damaged when inserted.



4 Insert the ink ribbon cartridge firmly until it stops.



When the ink ribbon cartridge cannot be inserted

Turn the power off, then back on gain. Then, insert the ink ribbon cartridge.

5 Close the front panel.

Notes

When using ink ribbon cartridge

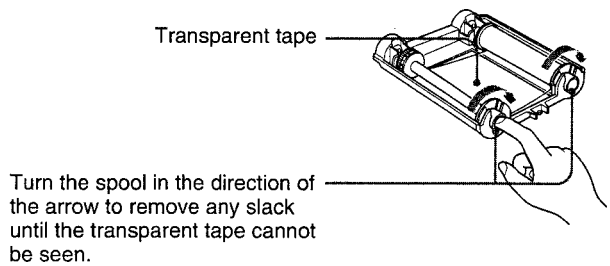
- Once an ink ribbon cartridge has been completely used, replace it. Ink ribbon cartridges are not reusable.
- Do not touch the ink ribbon cartridge or place it in a dusty location. Finger prints or dust on the ink ribbon will result in imperfect printing or malfunction of the head.

When storing ink ribbon cartridge

- Avoid placing the ink ribbon cartridge in a location subject to:
  — high temperatures
  — high humidity
  — excessive dust
  — direct sunlight
- Store a partially used ink ribbon cartridge in its original packaging.

If your ink ribbon should tear

Repair the tear with transparent tape. There should be no problem with using the remaining portion of the ribbon.



Loading Paper

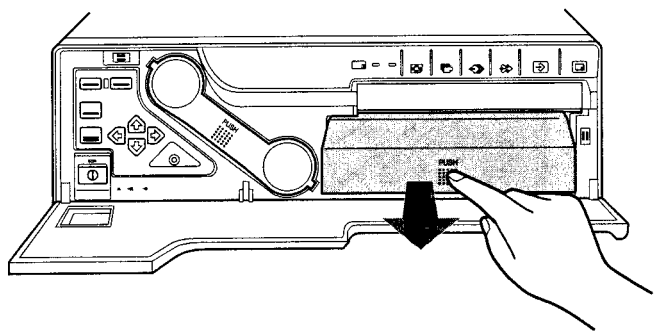
To load paper, follow the procedure below. Be careful not to touch the printing surface.

Notes

- Use only ink ribbon cartridge and paper "UP-2010 Color Printing Pack", that are designed for use with this printer. Failing to do so is likely to result in unsatisfactory printing or malfunctions.
- When loading the paper while the printer is operating, do not turn off the power. Turning off the power will cause the image stored in memory to be lost.
- Do not touch the ink ribbon when handling the paper.

1 Open the front panel by pulling the front panel top towards you.

2 Push the part marked with PUSH on the paper tray.
The paper tray pops out.

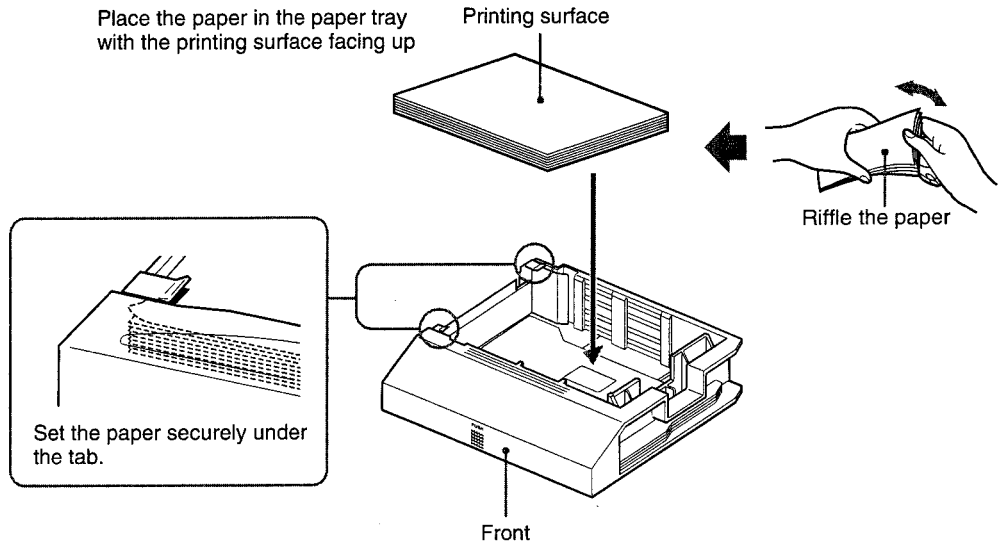


3 Place the paper in the paper tray.

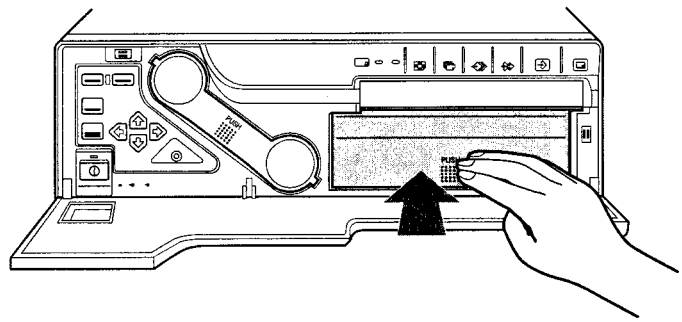
Notes

- When adding paper to a partly full tray, be careful that the total number of sheets does not exceed the limit. If you exceed this limit, paper jams may occur.
  The limit is the amount of paper coutained in one printing pack.
  For detailed information on the maximum amount of paper that the paper tray can hold, see "Ink Ribbon Cartridge and Paper" page 50.
- Load the paper so that it lays flat in the paper tray. If the paper is curled, it will overflow from the paper tray and the printing position may shift. If this happens, load fewer sheets in the paper tray.

Continue to next page →



4 Slide the paper tray back into the printer until it clicks into place.



5 Close the front panel.

Notes

When handling the paper

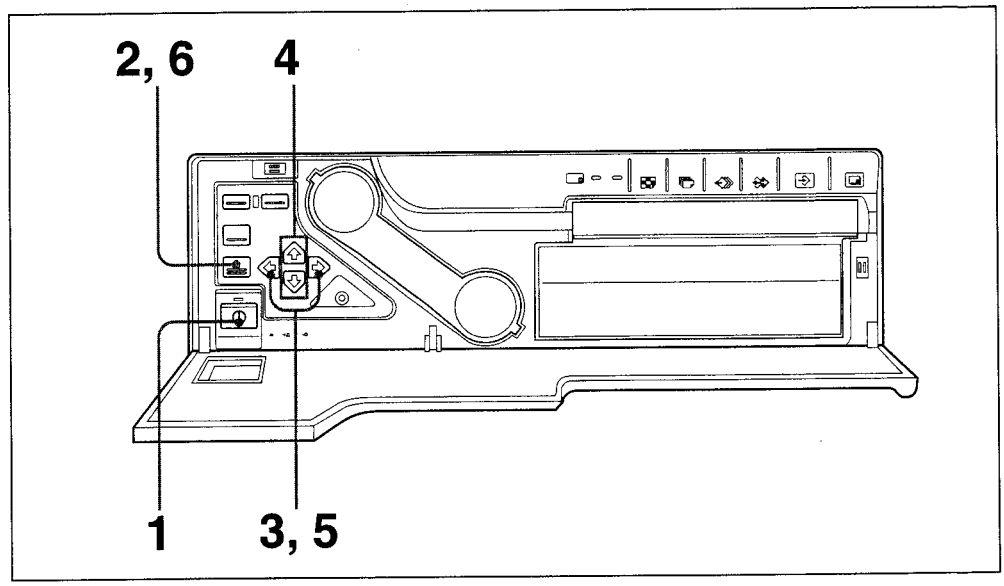
Do not touch the printing surface. Dust or finger prints are likely to cause unsatisfactory printing or malfunction of the head. Hold the paper by the printing surface protection sheet.

When storing the paper

- Avoid storing the paper in a location subject to:
  - — high temperatures
  - — high humidity
  - — excessive dust
  - — direct sunlight
- Use the original package for storing unused paper.

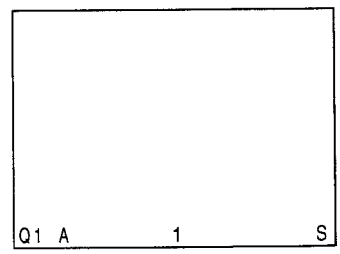
Selecting the Input Signal

Before printing, select the input signal (the input connector to which the signal to be printed is being input—VIDEO or S-VIDEO. Once you have selected the input signal, this setting remains effective until you select another source.



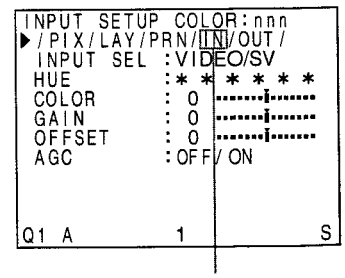
1 Turn on the video monitor and the printer.
The right screen appears.

Video monitor screen



2 Press the MENU button.
The screen previously opened appears.

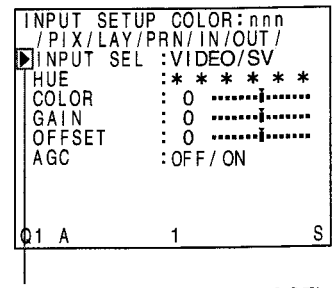
3 Select IN by pressing the ⇦ or ⇨ button.



By switching IN to green with the ⇦ or ⇨ button, INPUT SETUP appears.

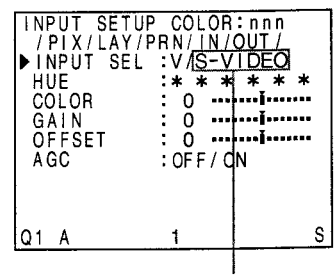
Continue to next page →

4 Select INPUT SEL by pressing the ⇧ or ⇩ button.



Position the cursor to INPUT SEL by pressing the ⇧ or ⇩ button.

5 Select the input signal by pressing the ⇦ or ⇨ button.



Switch the desired input signal to green by pressing the ⇦ or ⇨ button. The selected input signal turns green and is spelled out.

Source signal of the image to be printer	Video monitor and printer window display (the selected input signal is spelled out)
Signal from video equipment connected to the VIDEO INPUT connector	V → VIDEO
Signal from video equipment connected to the S-VIDEO INPUT connector	SV → S VIDEO

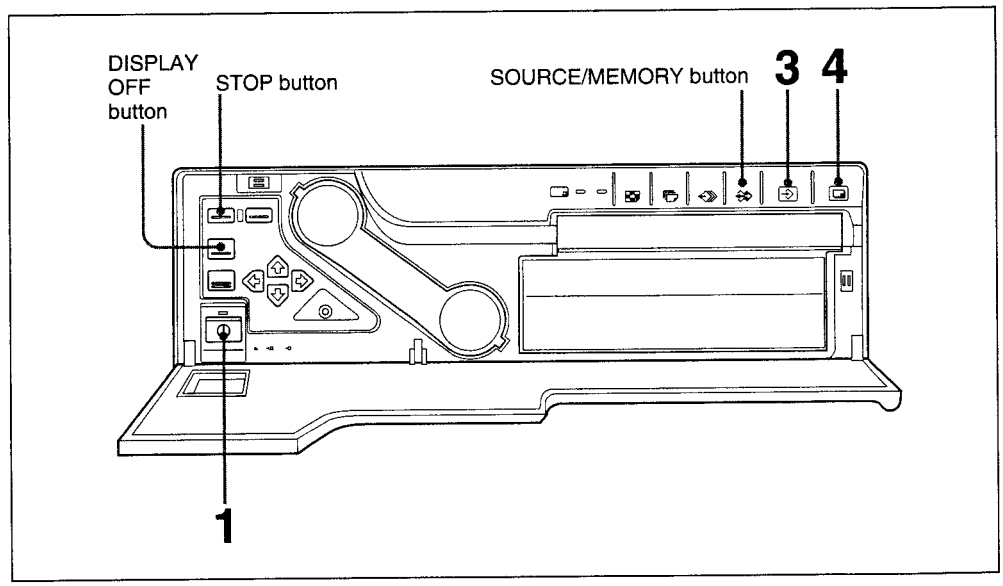
6 Press the MENU button.
The regular screen appears.

Making Full-Size Printouts

This section explains how to make a full-size printout. The operations described here constitute the basic procedure for making a printout.

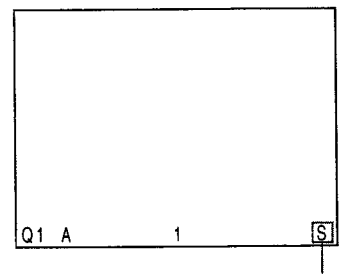
Before making a full-size printout

- All connections should have already been made. (see page 53)
- Ensure that the appropriate ink ribbon cartridge/paper set is being used and that they are correctly loaded. (see pages 8, 11 and 50)
- Select the input signal to be used to make a printout. (see page 13)
- Set the printer to store one full-size image into memory. (see page 29)
- Select the appropriate memory page. (see page 28)



1 Turn on the video monitor and the printer.

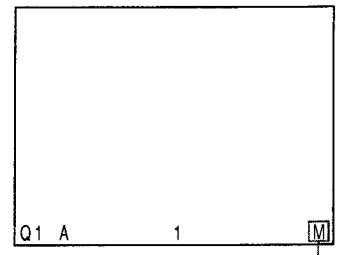
2 Start the video source.
This operation is done using the controls of the video equipment acting as the source.



Shows that the image from source equipment is displayed on the video monitor screen.

Continue to next page →

3 Press the CAPTURE button at the instant when the image you want to print appears on the screen.
The image is captured into memory. The memory image is displayed on the screen. Which image appears after this, the source image or memory image, depends on the setting made with AUTO LIVE on the FUNCTION SETUP menu (page 34).



Shows that the image captured in memory is displayed on the video monitor screen.

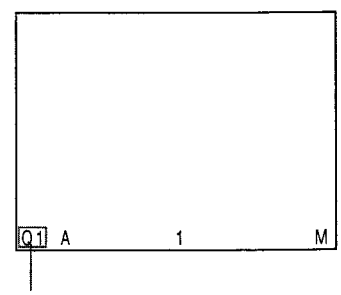
If the stored image is blurred

A quickly moving image may be blurred when printed. Should this occur, change the MEMORY setting to FIELD on the LAYOUT SETUP menu. Although the blur should be eliminated, the ultimate print quality will be slightly degraded.

To change the image in memory

① To display the source image when the memory image is displayed on the screen, press the SOURCE/MEMORY button .
② Press the CAPTURE button at the instant the image you want to print appears. The previous image is replaced with the new one.

4 Press the PRINT button.
It takes about 60 seconds to make a printout.
The printout pops out from the paper tray.



Blinks while printing
During color printing: Printing start - yellow - magenta - cyan - printing end

Note

- Do not turn off the power during printing.
  If you do so, paper may not be ejected and may jam in the printer.
- Do not pull the paper from the paper cover until printing has been completed.
- You can not change the printer application mode or settings on the WINDOW SETUP menu during printing.

To stop printing

Press the STOP button. After the current printing is completed, the remaining printing is cancelled and the printer stops its operation.

If the printer does not print

The printer will fail to print in the following cases:

- While an error message is displayed on the monitor screen.
  - — In this case, the paper is ejected without printed even if you press the PRINT button. Proceed as described in "Error/Warning Messages" on page 77.
- Image is not stored in the memory.
  - — Image data stored in the memory is lost if you turn off the power. Cature the image into memory again, then press the PRINT button.

When you want to see an image that is hidden below a screen message

You can erase the screen message from the video monitor screen by pressing the DISPLAY OFF button. The screen message disappears. To disply a screen message, press the DISPLAY OFF buton again.

If a black line appears on the printout

Sometimes, a black line appears on the printout, although it does not appear on the video monitor. This black line can be eliminated from the printout. (see "Changing the Printout Size/Printout Area" page 62)

If the image quality of printouts is not satisfactory

You can adjust the image quality of the printouts. (See "Adjusting the Printout Color" pages 59)

Notes

When storing your printouts:

- Avoid storing the printout in a location subject to high temperatures, high humidity, excessive dust and direct sunlight.
- Do not stick tape on a printout. Also, avoid leaving a plastic eraser on a printout or placing a printout in contact with materials which contain plasticizer (under a desk mat, for example).
- Do not allow alcohol or other volatile organic solvents to come into contact with the printouts.

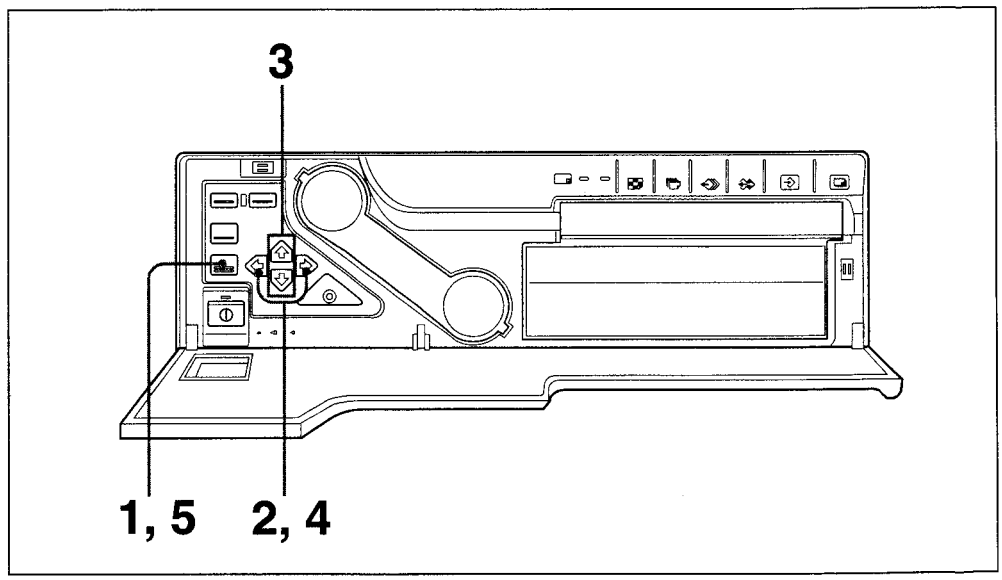
Making Multiple Copies of Identical Printouts

You can make up to 9 copies of identical printouts.
The following two methods are available to set the number of printouts.

- On the menu
- Using the PRINT QTY button. However, you cannot decrease the number of printouts.

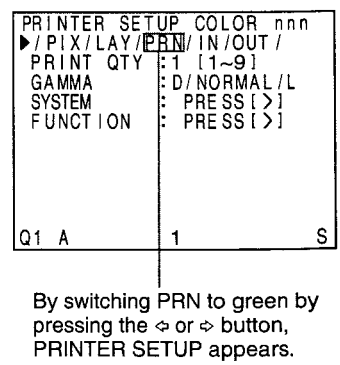
The following steps can be performed either before you start printing or while printing. You can change the designated number of copies any time during printing.

Setting the printout quantity on the menu



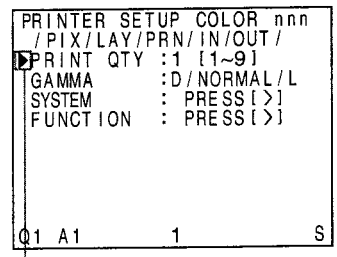
1 Press the menu botton.
The menu previously opened appears.

2 Select PRN by pressing the ⇦ or ⇨ button.
The PRINTER SETUP menu arrears.



By switching PRN to green by pressing the ⇦ or ⇨ button, PRINTER SETUP appears.

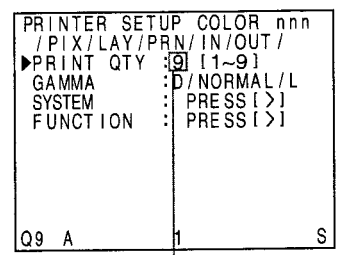
3 Select PRINT QTY by pressing the ⇧ or ⇩ button.



Position the cursor to PRINT QTY by pressing the ⇧ or ⇩ button.

4 Set the number of copies by pressing the ⇦ or ⇨ button.

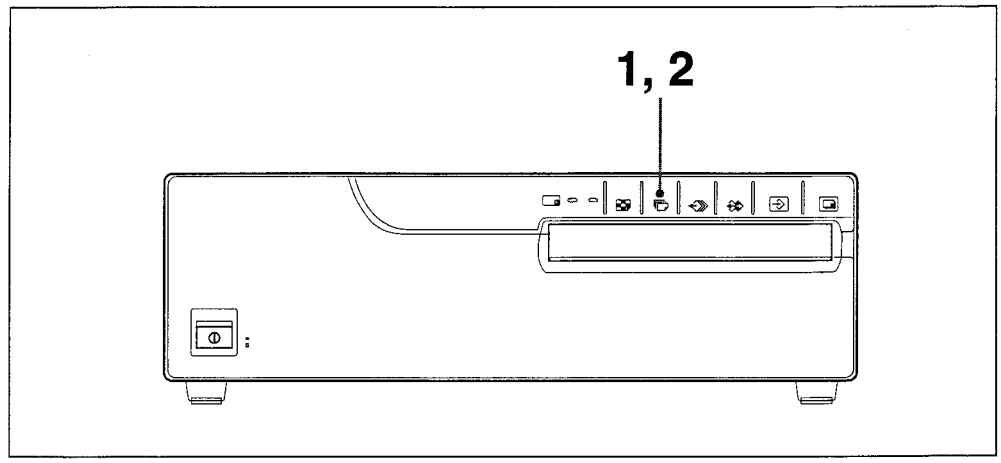
When setting	Button
To increase the quantity	⇨
To decrease the quantity	⇦



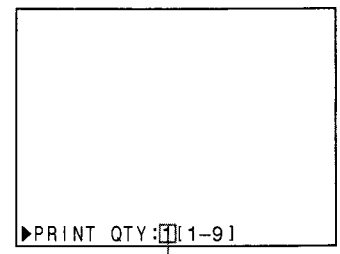
Quantity of copies

5 Press the MENU button.
The regular screen appears.

Setting the printout quantity by using the PRINT QTY button



1 Press the PRINT QTY button.
The right screen appears.
If you do not perform any operation after you press the PRINT QTY button, the currently set number of copies appears for 2 or 3 seconds, after which it disappears.



The currently set number of copies appears within a couple of seconds.

2 Press the PRINT QTY button until the desired number appears.
Repeatedly pressing the PRINT QTY button increases the quantity up to 9 and stops.

To decrease the number of copies

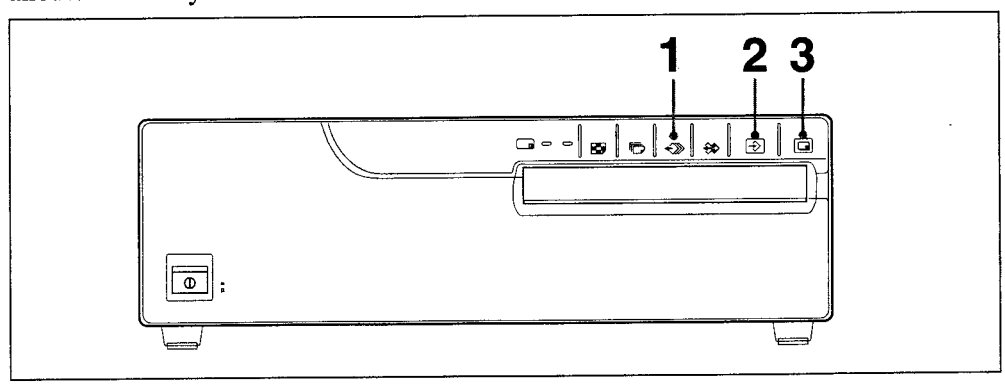
When decreasing the number of copies, you have to change the number on the menu.

If the paper runs out during printing

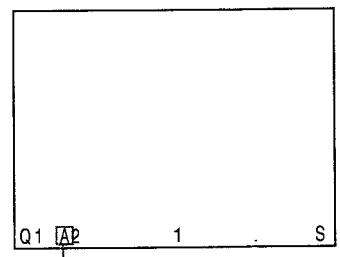
Load the paper into the paper tray and press the PRINT button. The printer prints the remaining copies.

Capturing Another Image While Printing

While the printer is printing, you can capture another image into another memory page to be printed once the printer becomes free. The usable memory pages depend on the type of printouts and settings. (pages 25 and 26)
When the FIELD memory mode is selected, you can capture another image into another memory.



1 Select the desired memory page by pressing the MEMORY PAGE button. Pressing the MEMORY PAGE button switches the memory page.



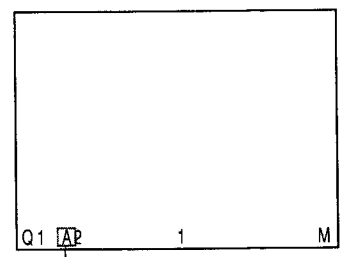
The available memory pages appear in white.

2 Press the CAPTURE button at the instant the image you want to print appears on the screen.

Note

If you press the CAPTURE button to caputwe the image into memory page whose image is being printed, "PRINTING MEMORY" appears and the image cannot be captured.

3 Press the PRINT button.
The image captured in step 2 is queued. The image is printed as soon as all previous printing jobs have been completed.



Memory page whose image has been queued for printing (blinks white on the video monitor)
The memory page display returns to white on the video monitor once printing has been completed.

Note

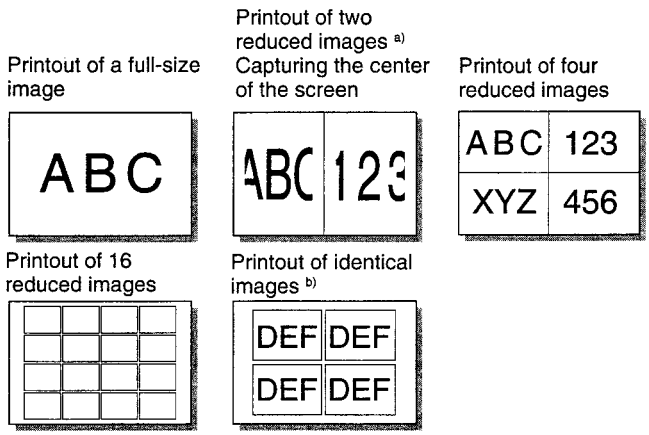
Another image cannot be stored into a memory page into which an image has already been queued for printing. In such a case, the "PLEASE WAIT RESERVED MEMORY" appears.

Making Variations of Printouts

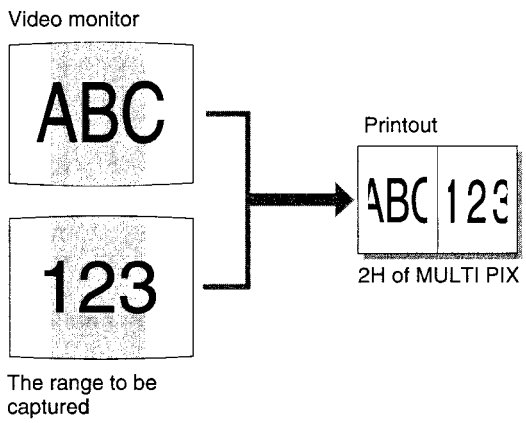
You can store various kinds of images into memory and make variations of printouts using the images captured into memory.

Variations of printouts that the printer can produce

The following variations of printout of the images stored in memory can be made.



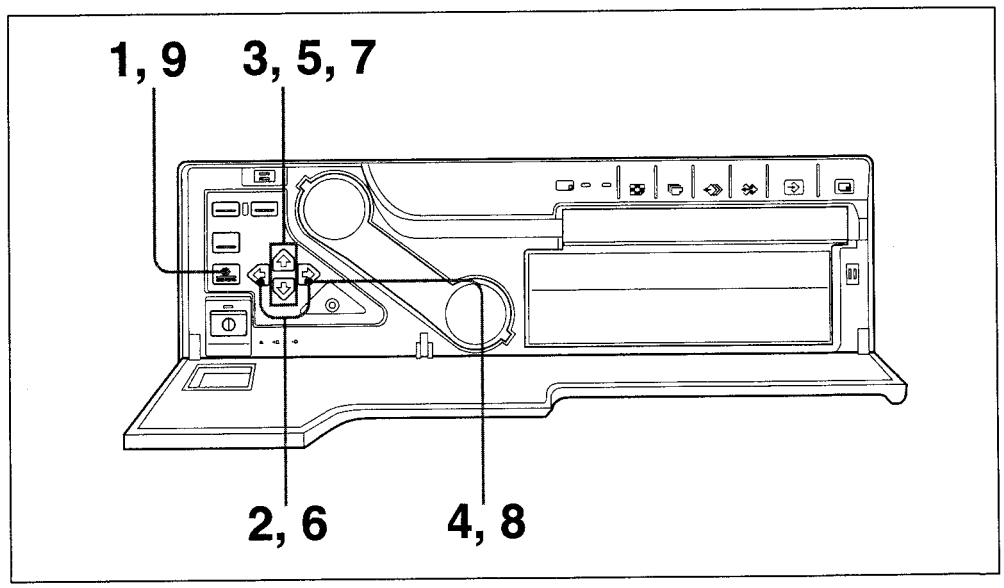
a) In 2H print mode, the image in the center of the screen is captured in memory.



b) 4 or 16 identical images are printed in one proitout in one sheet of paper.

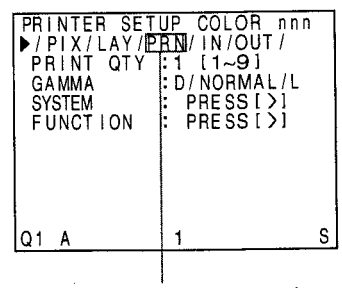
Selecting the Printer Application Mode

The unit allows you to make printouts according to your need, such as regular printouts.
You can select the application mode of the printer on the SYSTEM SETUP menu.
When you use the printer first time, the standard application mode for regular printouts is selected.
Select the application mode according to what kind of printouts you want to make.



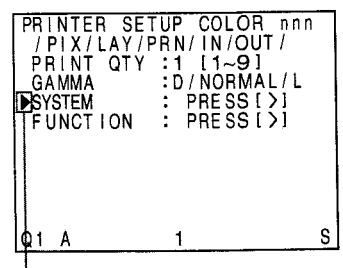
1 Press the MENU button.
The menu previouly opened appears.

2 Select PRN by pressing the ⇦ or ⇨ button.
The PRINTER SETUP menu apperas.



By switching PRN to green by pressing the ⇦ or ⇨ button, PRINTER SETUP appears.

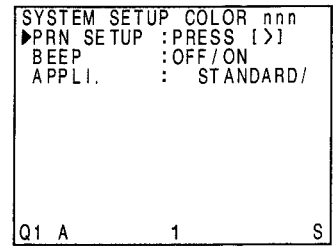
3 Select SYSTEM by pressing the ⇧ or ⇩ button.



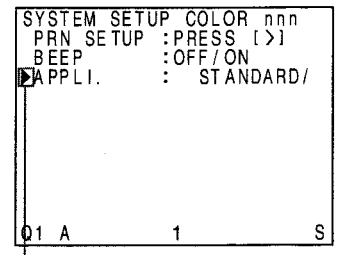
Position the cursor to SYSTEM by pressing the ⇧ or ⇩ button.

Continue to next page →

4 Press the ⇨ button.
The SYSTEM SETUP menu appears.

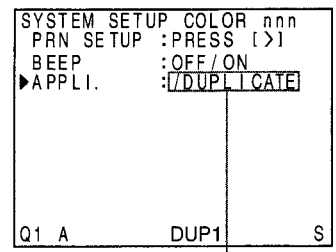


5 Select APPLI. by pressing the ⇧ or ⇩ button.



Position the cursor to APPLI.
by pressing the ⇧ or ⇩ button.

6 Select the desired application mode by pressing the ⇦ or ⇨ button.



Switch the desired mode to green
by pressing the ⇦ or ⇨ button.

Application mode	Printout
STANDARD	Printout with a full-size image, two different reduced images, four different reduced images and 16 different reduced images
DUPLICATE	Printouts of a full-size image[a], four identical reduced images and 16 identical reduced images

a) The printer prints in field mode when a full-size image printout is selected in DUPLICATE mode. It is recommended to make a full-size printout in STANDARD mode.

7 Select PRN SETUP by pressing the ⇧ or ⇩ button.

8 Press the ⇨ button.
The PRINTER SETUP menu appears.

9 Press the MENU button.
The regular screen appears.

Note

Chaning the appliction mode results in clearing images stored in all of memory pages.

About the Memory

To make printouts, it is first necessary to capture the image into memory.
When capturing the image, there are two ways to use the memory, one is frame mode and the other is field mode.
Frame mode: A image is captured in one memory.
Field mode: A memory is divided into two, and images can be captured in each.
A memory in which an image is captured is called memory page in this manual.
The number of usable memory pages depends on the type of the selected reduced images and memory mode.

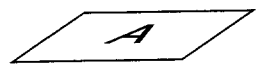
Reduced image	Memory mode	Number of memory pages
1/2H/4/16	Frame	1 (A)
1/2H	Field	2 (A1, A2)

When you select four-reduced image mode or 16-reduced image mode, the unit selects automatically frame mode regardless of the setting of MEMORY on the LAYOUT SETUP menu.

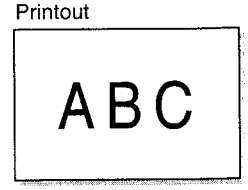
In frame mode

Video monitor screen

The image displayed in the video monitor is captured in the memory page A.



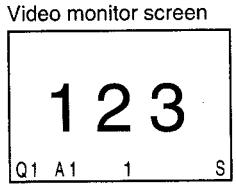
Printout



A still subject can be printed with high resolution.

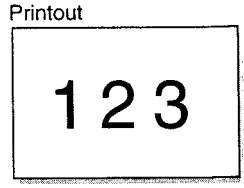
In field mode

Video monitor screen



The image displayed in the video monitor is captured in the memory page A1.

Printout

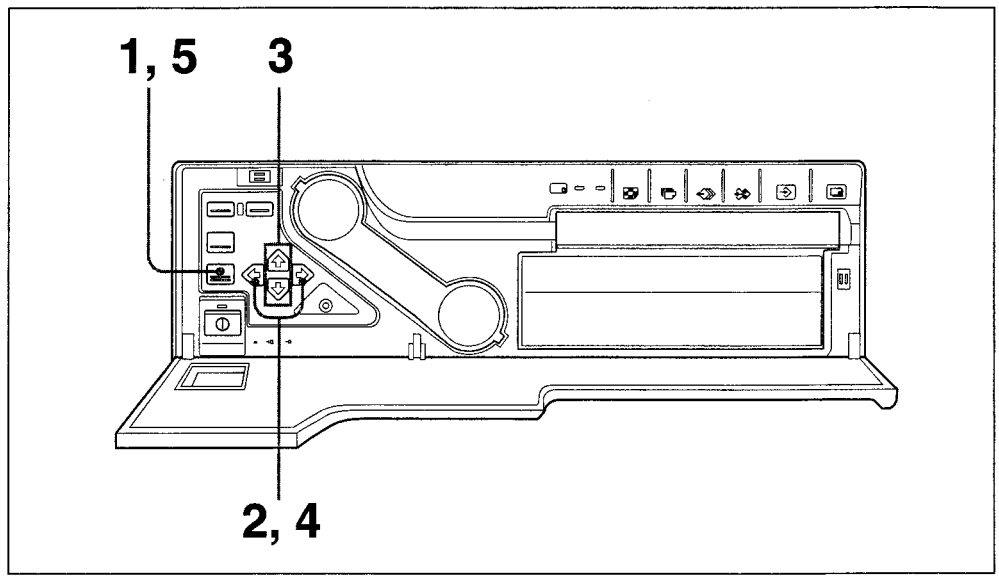


A quickly moving subject can be printed without blurring.

Selecting the memory mode

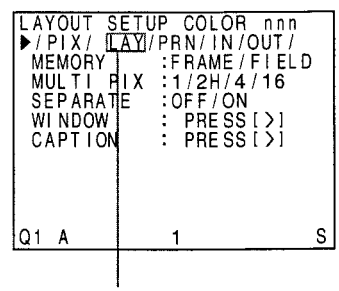
Note

You can select the desired memory page only when 1 or 2H is selected in STANDARD mode.



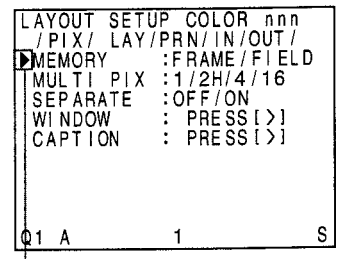
1 Press the MENU button.
The menu just before opened appears.

2 Select LAY by pressing the ⇦ or ⇨ button.



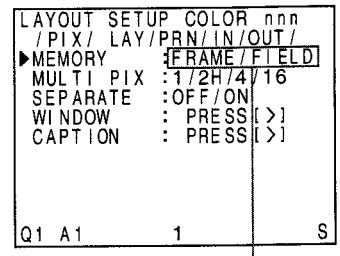
By switching LAY to green by pressing the ⇦ or ⇨ button, LAYOUT SETUP appears.

3 Select MEMORY by pressing the ⇧ or ⇩ button.



Position the cursor to MEMORY by pressing the ⇧ or ⇩ button.

4 Select the desired memory mode by pressing the ⇦ or ⇨ button.

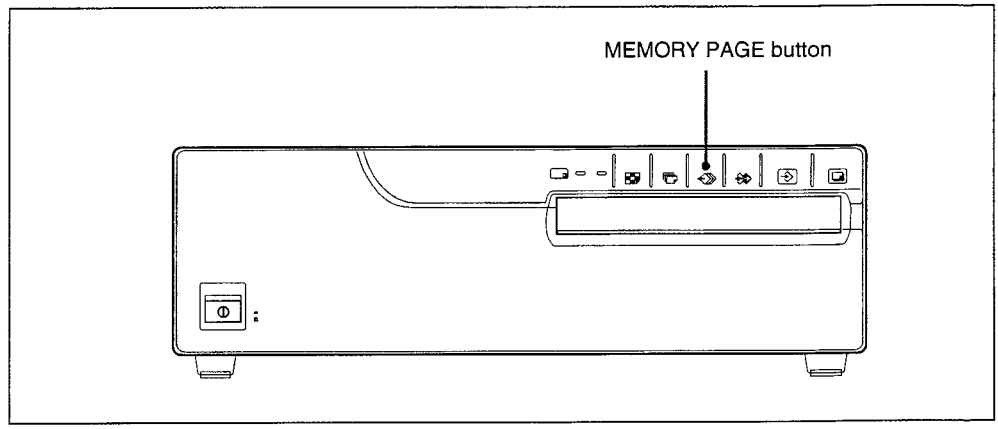


Switch the desired memory mode to green by pressing the ⇦ or ⇨ button.

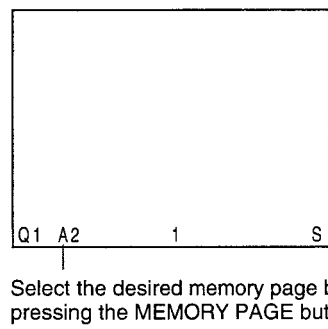
Frame: We recommend that, whenever possible, you print in this mode.
Field: Select this mode to reduce blurring when you print a quickly moving image.

5 Press the MENU button.
The regular screen appears.

Selecting a memory page



To select a memory page, press the MEMORY PAGE button.



Note

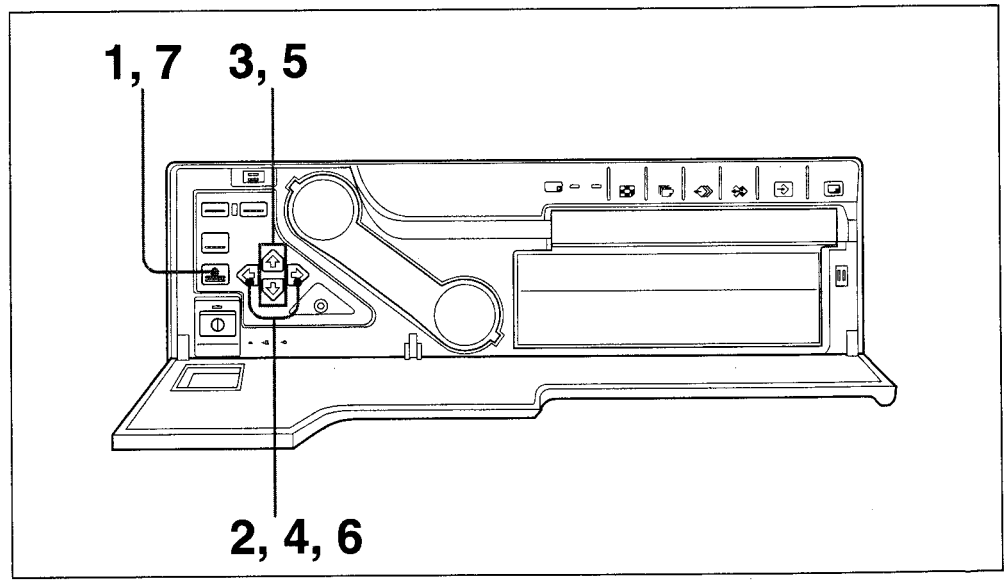
The memory page whose image is being printed is blinking on the video monitor screen. Even if you select this blinking page, you cannot capture the image in this page.

Making a Printout of Multiple Different Reduced Images

You can store multiple images into a memory page and make a printout with those reduced images. This section explains how to make a printout with multiple reduced images.
A printout having multiple reduced images is done by following the procedure below.

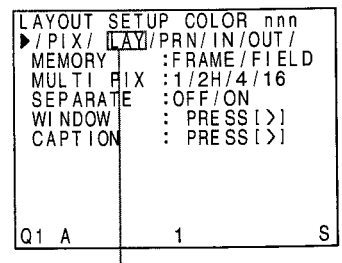
- Determining the number of reduced images. (on this page)
- Selecting the image on the video monitor after capturing the image (page 33)
- Setting the printer application mode to STANDARD (page 23)

Selecting the number of reduced images to be captured in memory



1 Press the MENU button.
The menu just before opened appears.

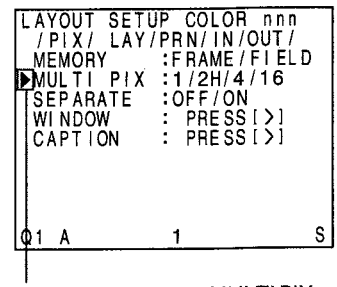
2 Select LAY by pressing the ⇦ or ⇨ button.



By switching LAY to green by pressing the ⇦ or ⇨ button, LAYOUT SETUP appears.

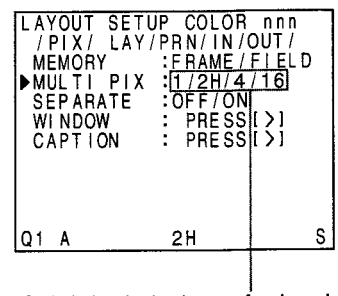
Continue to next page →

3 Select MULTI PIX by pressing the ⇧ or ⇩ button.



Position the cursor to MULTI PIX by pressing the ⇧ or ⇩ button.

4 Select the desired type of reduced-images printout by pressing the ⇦ or ⇨ button.

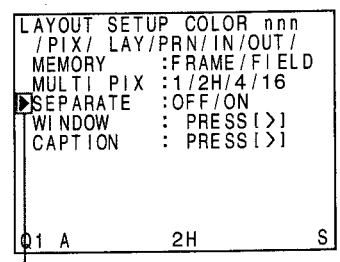


Switch the desired type of reduced-image printout to green by pressing the ⇦ or ⇨ button.

Displayed type	Number of reduced images
1	1 (Full-size image)
2H	2 (Two reduced images around the center of the screen)
4	4 (Four reduced images)
16	16 (16 reduced images)

To make a printout of reduced images with white borders, go to step 5.
To make a printout without white borders, go to step 7.

5 Select SEPARATE by pressing the ⇧ or ⇩ button.



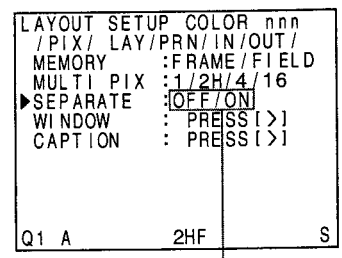
Position the cursor to SEPARATE by pressing the ⇧ or ⇩ button.

Note

In the LAYOUT SETUP menu, if items such as MEMORY and SEPARATE are not effective, DUPLICATE is selected. In such a case, select the STANDARD mode in the SYSTEM SETUP menu first.

6 Select whether the images are printed with or without white borders by pressing the ⇦ or ⇨ button.

When you select	Settings
Printouts without white borders	OFF
Printouts with white borders	ON

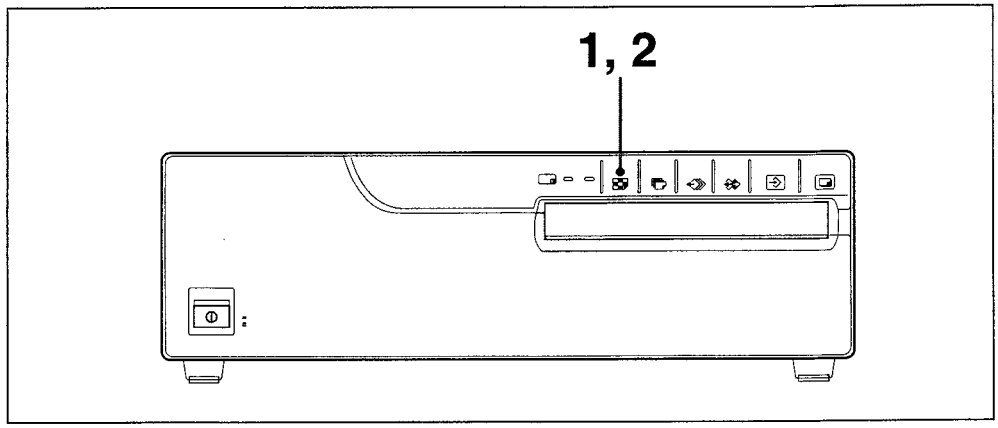


Switch the desired mode to green by pressing the ⇦ or ⇨ button.

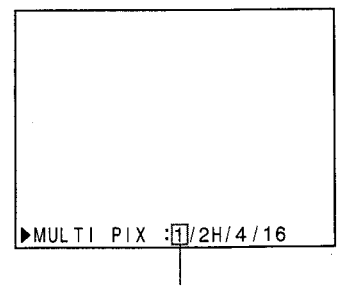
7 Press the MENU button.
The regular screen appears.

To select the desired type of reduced-image printout using the MULTI PICTURE button

You can select the number of reduced images using the MULTI PICTURE button on the front panel.



1 Press the MULTI PICTURE button.
The current setting appears. The video monitor screen is reset to the regular screen after a few seconds.



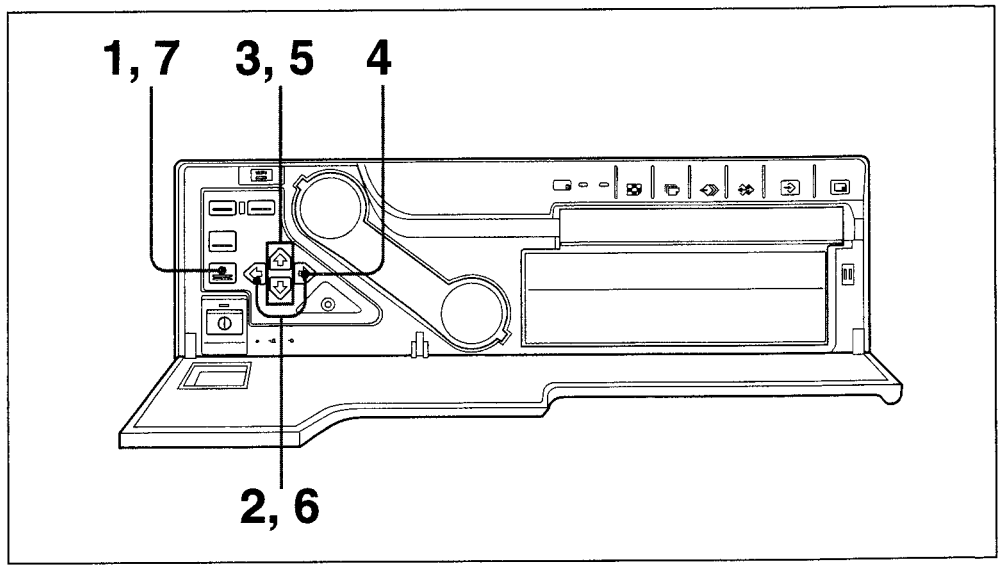
The currently selected type of reduced-image printout is lit green.

2 Press the MULTI PICTURE button until the desired type of reduced-image printout appears.
Repeatedly pressing the MULTI PICTURE button switches the type of reduced-image printout

For detailed information on the type of reduced-image printout, see "Selecting the number of reduced images to be captured in memory". (page 29)

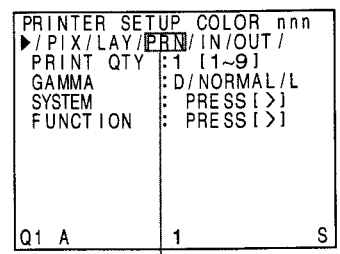
Selecting the images on the video monitor after capturing the image

You can select which image appears on the video monitor, source image or memory after capturing the image.



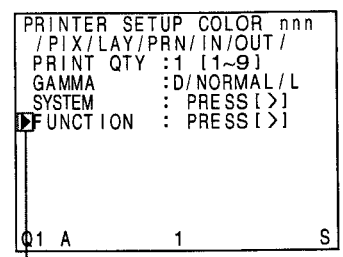
1 Press the MENU button.
The menu just before opened appears.

2 Select PRN by pressing the ⇦ or ⇨ button.



By switching PRN to green by pressing the ⇦ or ⇨ button, PRINTER SETUP appears.

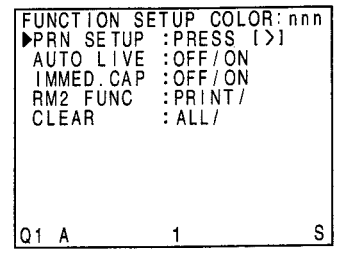
3 Select FUNCTION by pressing the ⇧ or ⇩ button.



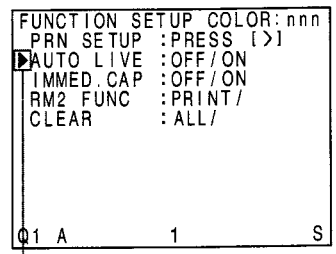
Position the cursor to FUNCTION by pressing the ⇧ or ⇩ button.

Continue to next page→

4 Press the ⇨ button.
The FUNCTION SETUP menu appears.

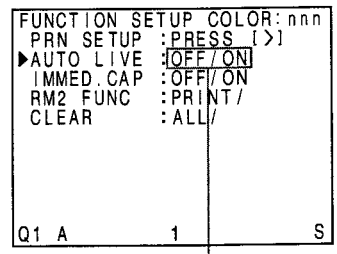


5 Select AUTO LIVE by pressing the ⇧ or ⇩ button.



Position the cursor to AUTO LIVE by pressing the ⇧ or ⇩ button.

6 Select which the image appears on the video monitor after the image is captured by pressing the ⇦ or ⇨ button.



Switch the desired mode to green by pressing the ⇦ or ⇨ button.

When you select	Setting
The image captured in memory appears just after the printer captures the image, and the memory image remains on the video monitor screen.	OFF
The image stored in memory appears just after the printer captures the image, then after a few seconds, the source memory appears, whenever you press the CAPTURE button.	ON

7 Press the MENU button.
The regular screen appears.

To return to the PRINTER SETUP menu

In step 9, position the cursor to PRN SETUP and press the ⇨ button.
The PRINTER SETUP menu appears again.

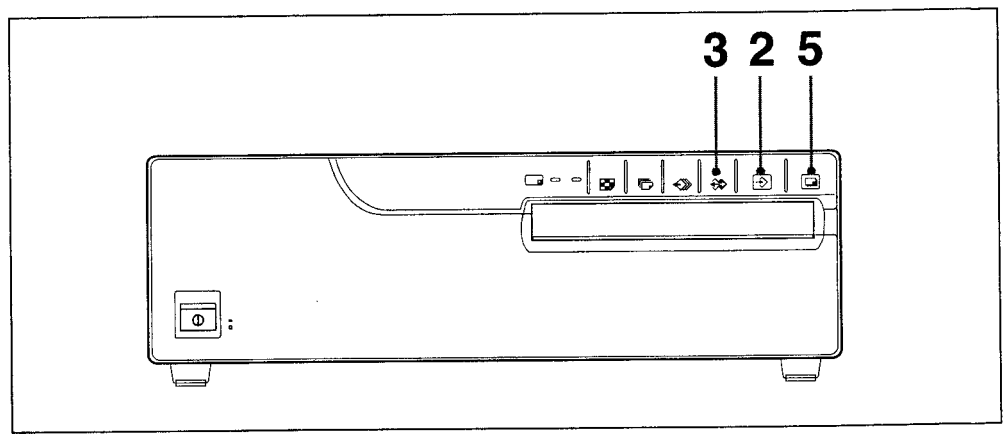
Making a printout with multiple reduced images

This subsection explains how to make printouts of multiple reduced images taking, as an example, the making of a printout of four reduced images.

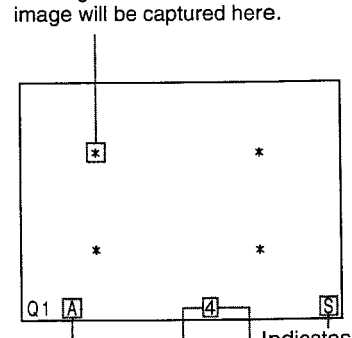
Before making the printout of four reduced images

- Select the type of the four-reduced image and whether to put the white borders [a]. (see page 29)
- Select the appropriate memory page. (see page 28)
- Select which image will appear after the image has been stored into memory, the memory image or source image. (see page 33)

a) When the type of four reduced images or 16 reduced images is selected, the frame mode is automatically selected.



1 Start the video source.
This operation is done using the controls of the video equipment acting as the source.



Blinks green to indicate that an image will be captured here.

The memory page into which four reduced images are captured.

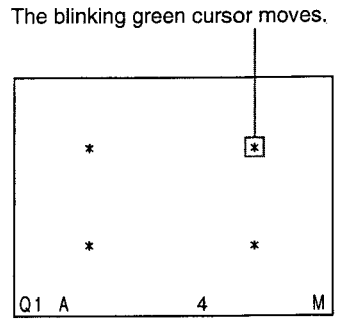
Type of multiple reduced images

Indicates that the images from video equipment is displayed on the screen.

Indicates that the white borders are not attached around images.
When the white border is attached, 4F appears

Continue to next page →

2 Press the CAPTURE button at the instant the image you want to print appears on the screen.
The image has been stored to the star (*) that blinked green on the video monitor screen in step 1.
The green blinking star (referred to as the cursor) on the monitor moves to the next position.



At this time, the image captured in memory is displayed on the video monitor screen. However, the image to be displayed after a few seconds depends on the setting of AUTO LIVE in the FUNCTION SETUP menu. (see page 33)

Go to step 3 when the memory image remains on the video monitor screen.
Go to step 4 when the source image is displayed.

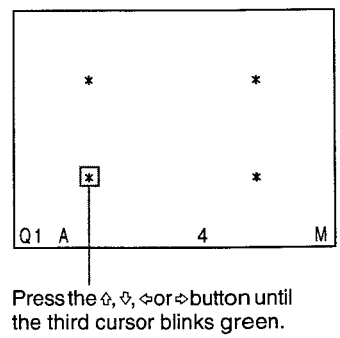
3 Press the SOURCE/MEMORY button.
The source image appears on the video monitor screen.

4 Repeat steps 2 and 3 until you have captured four images when the memory image remains on the video monitor screen.
Repeat step 2 until you have captured four images when the source image appears on the video monitor screen.

To replace a captured image

Example: When you want to change the image stored to the third position.

① Select the third position where there is the image which you want to replace by pressing the ⇧, ⇩, ⇦ or ⇨ button.
Pressing the ⇧, ⇩, ⇦ or ⇨ button moves the cursor one position vertically or horizontally.



② Start the video source.
If the memory image is displayed, press the SOURCE/MEMORY button to display the source image.
③ Press the CAPTURE button at the instant the image you want to print appears.
The previously stored image is replaced with the newly stored image.

To skip a previously captured image

When an image has already been captured, the previously captured image can be replaced by pressing the CAPTURE button.
Skip the corresponding image by pressing the ⇧, ⇩, ⇦ or ⇨ button.

5 Press the PRINT button.
The four reduced images are printed on one sheet of paper.

Making a printout with an insert

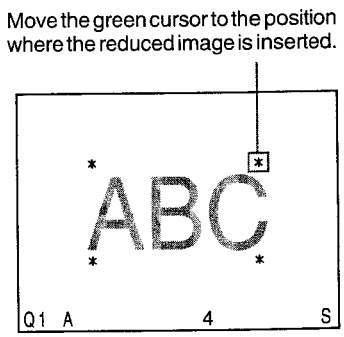
You can make printouts with an insert which is reduced image.
Example: To make a printout with one of four reduced images inserted.
The operation to make a printout with one of 16 reduced images is the same.

1 Display the full-size image stored in memory. (Follow steps 1 to 3 of "Making Full-Size Printouts" on page 15.)

2 Set the multiple reduced image type to 4 (without white borders).
(See "Selecting the number of reduced images to be captured in memory" on page 29.)

3 Capture the image to be inserted.

① Select the position where a reduced image is to be inserted by pressing the ⇧, ⇩, ⇦ or ⇨ button.



② Press the CAPTURE button at the instant the image you want to insert appears.
The image is captured to the position selected in step ①.

4 Press the MULTI PICTURE button.
The full-size image with an insert appears on the video monitor.

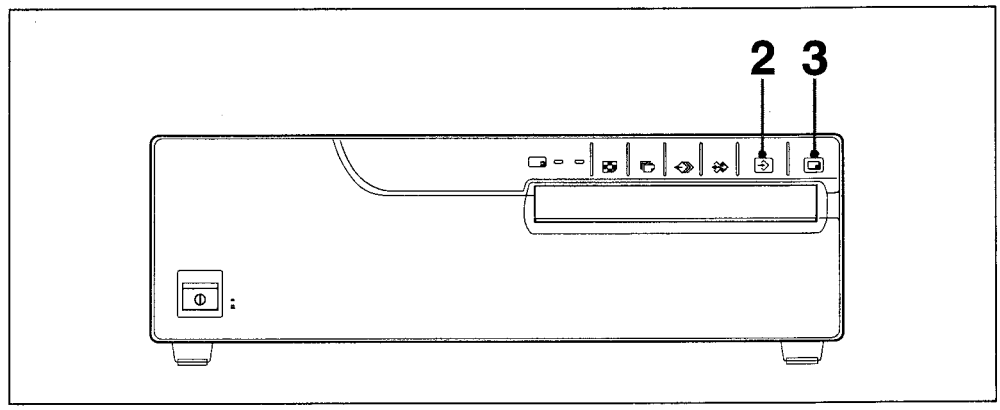
5 Press the PRINT button.
The image with an insert is printed.

Making Printouts of Identical Images

The unit supports the application mode such as DUPLICATE that allows you to make a printout for identical images.
This DUPLICATE mode allows you to make a printout with a full-size image, identical six reduced images or 16 reduced images.

Before making printouts with identical images

- Select the application mode DUPLICATE. (page 23)
- Decide the number of images. (page 29)



1 Start the video source.
This operation is done using the controls of the video equipment acting as the source.

2 Press the CAPTURE button at the instant the image you want to print appears on the screen.

To replace a stored image

① When the memory image remains on the video monitor screen, press the SOURCE/MEMORY button to display the source image.
② Press the CAPTURE button at the instant the image you want to print appears. The previously copied identical images are replaced with the newly captured copied images.

3 Press the PRINT button.
The identical reduced images of the same size are printed in a single printout.

Making Printouts With a Caption

A caption, such as data or comments, can be added to a printout below the image. You can input up to 48 characters.

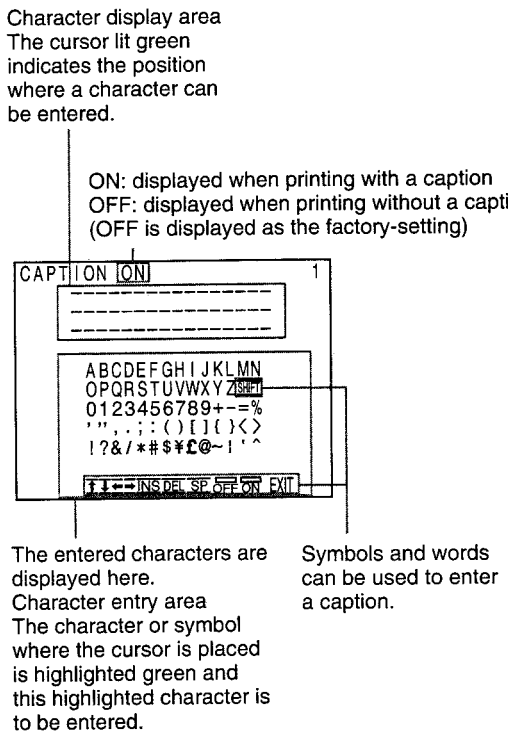
About the CAPTION menu

A caption is entered from the CAPTION menu. You can input caption in any printer application mode and make a printout with a caption.

Note

A caption may not be cleary printed in Field mode.

A brief explanation of each item of the CAPTION menu is given below.



Symbols and words can be used to enter a caption

Monitor display	Function
INS	Inserts one character without easing the highlighted character.
DEL	Deletes a highlighted character and characters back by one.
SP	Puts one space at the position of the highlighted character as erasing that character. One space is left.
OFF	Selects to print without a caption.
ON	Selects to print with a caption.
EXIT	Returns from the CAPTION menu to LAYOUT SETUP menu.
SHIFT[a)]	Selects either capital letters or lower-case letters.

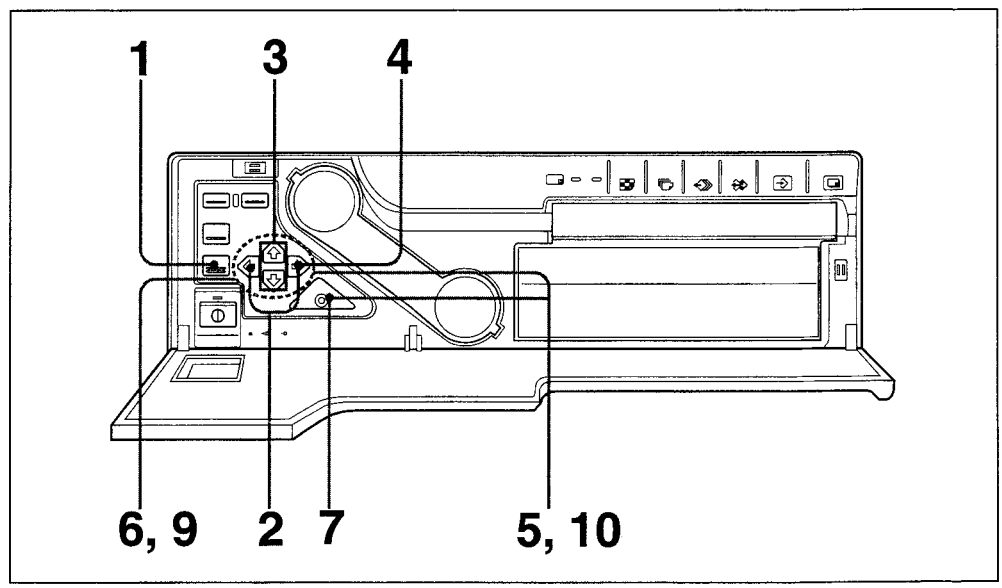
a) By highlighting SHIFT green and pressing the EXEC button, capital letters are changed to lower-case letters, or lower-case letters are changed to capital letters in the character entry area.

Entering a Caption

Enter a caption as follows. The setting remains effective until you enter a new setting - even if you turn the power off.

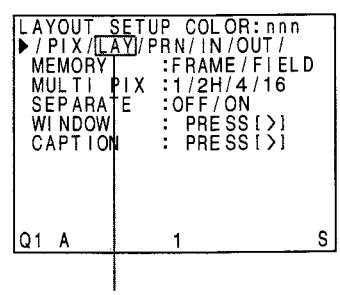
Notes

- If you turn off the power of the printer without returning to the LAYOUT SETUP menu or regular screen, the entered characters are cleared.
- During printing, you cannot enter or edit caption in the CAPTION menu.



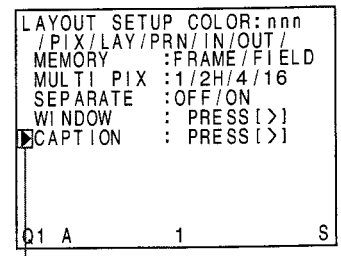
1 Press the MENU button.
The menu just before opened appears.

2 Select LAY by pressing the ⇦ or ⇨ button.



By switching LAY to green by pressing the ⇦ or ⇨ button, LAYOUT SETUP appears.

3 Select CAPTION by pressing the ⇧ or ⇩ button.



Position the cursor to CAPTION by pressing the ⇧ or ⇩ button.

4 Press the ⇨ button.
The CAPTION menu appears.

5 Position the cursor (the line lit green) to the point where you want to enter the character in the character display area.

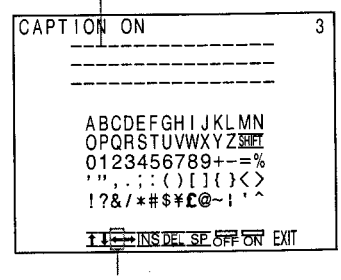
To move the cursor:

① Select the arrow corresponding to the direction in which you want to move the green cursor in the character display area, by pressing the ⇧, ⇩, ⇦ or ⇨ button.

② Press the EXEC button.
Each time you press the EXEC button, the cursor moves one position in the designated direction.

Example: Move the cursor to the left by two.

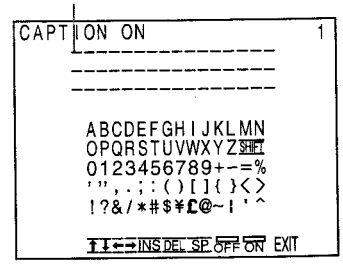
The cursor is curenily positioned here.



① Highlight the ⇦ button green.

② Press the EXEC button twice.

The cursor moves to this position.



Note

When OFF is displayed, the CAPTION input mode is set to off. Thus, you cannot add a caption to the printouts. ("Making printouts with a caption" on page 44)

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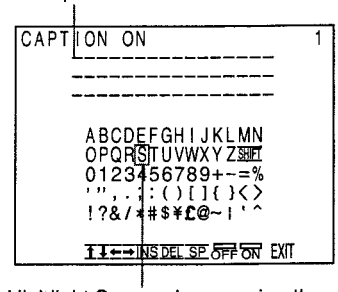
6 Select the character you want to enter by pressing the ⇧, ⇩, ⇦ or ⇨ button.

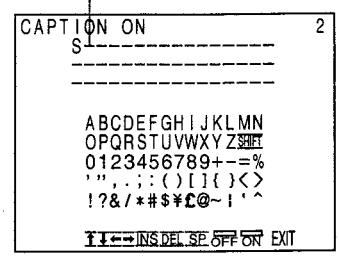
Example: To enter S



Highlight S green by pressing the ⇧, ⇩, ⇦ or ⇨ button.

7 Press the EXEC button.
The character selected in step 6 appears at the point where the green cursor is positioned in the character display area, after which the cursor moves to the next position.

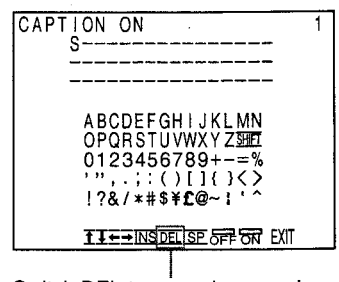
The cursor moves to this position.



When you enter the wrong character

① Select ⇦ by pressing the ⇧, ⇩, ⇦ or ⇨ button, then press the EXEC button.
The cursor moves back by one and the character entered in step 6 is highlighted green.

② Select DEL by pressing the ⇧, ⇩, ⇦ or ⇨ button.



Switch DEL to green by pressing the ⇧, ⇩, ⇦ or ⇨ button.

③ Press the EXEC button.
The character selected in ① is deleted.
When the character to be deleted is placed among entered characters, the characters back by one.

Note

A dark change of the monitor screen may occur after the EXEC button is pressed.

8 Repeat steps 5, 6 and 7 to enter the remaining characters of the caption.

To enter a space

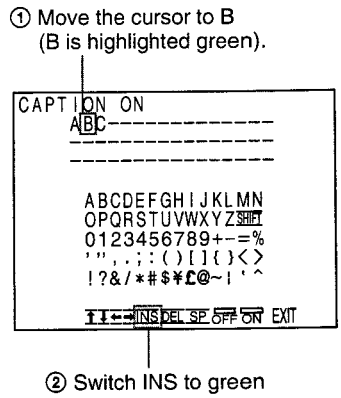
① Position the green cursor to the point where you want to enter a space by performing the operations explained in step 5.
② Select SP by pressing the ⇧, ⇩, ⇦ or ⇨ button.
③ Press the EXEC button.
A single space is entered and the green cursor moves to the next position. If there is a character at the position where the space is entered, that character is deleted and a single space is left.

To replace a previously entered character without changing the number of characters

You can replace a previously entered character with a new one.
① Position the green cursor to the character to be replaced by performing the operations explained in step 5.
② Overwrite the invalid character with the correct character by performing the operations explained in steps 6 and 7.
The previously entered character is replaced with the new one.

To add characters midway

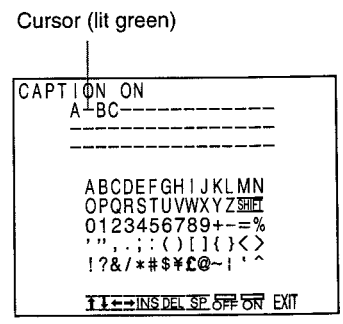
① Position the cursor to the position where a character is to be added by performing the operations explained in step 5.
Example: To Add a character between A and B
② Select INS by pressing the ⇧, ⇩, ⇦ or ⇨ button.



③ Press the EXEC button.
A single space is inserted between A and B and the green cursor is positioned at the space.

Note
A dark change of the monitor screen may occur after the EXEC button is pressed.

④ Enter the character to be added.



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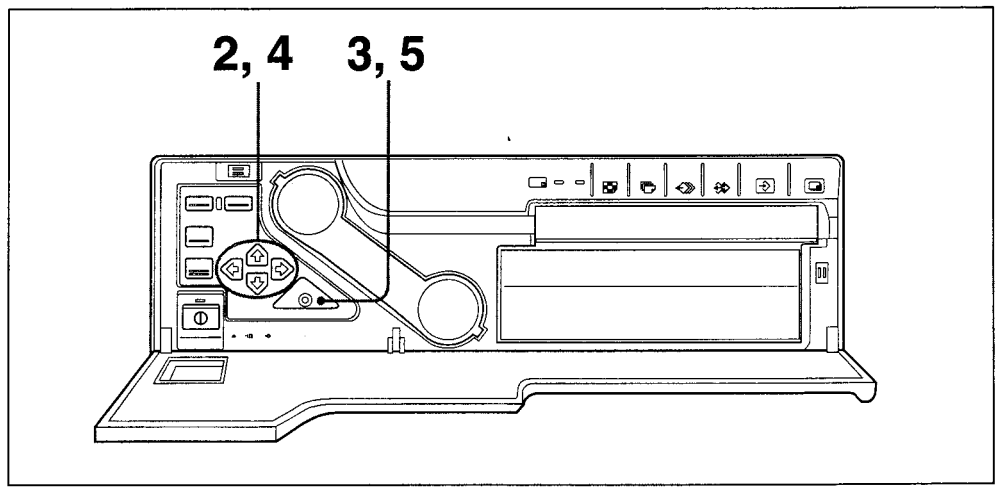
9 Select EXIT by pressing the ⇧, ⇩, ⇦ or ⇨ button.

10 Press the EXEC button.
The entered characters are stored in the memory.
The LAYOUT SETUP menu appears.

To return to the regular screen

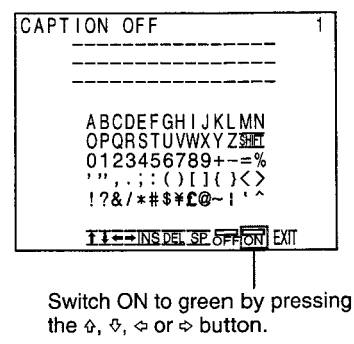
Press the MENU button in step 9. The entered characters are stored in the memory and the regular screen appears.

Making printouts with a caption



1 Display the CAPTION menu.
For details of how to display the CAPTION menu, see steps 1 to 4 in "Entering a Caption".

2 Select ON by pressing the ⇧, ⇩, ⇦ or ⇨ button.



Switch ON to green by pressing the ⇧, ⇩, ⇦ or ⇨ button.

3 Press the EXEC button.

4 Select EXIT by pressing the ⇧, ⇩, ⇦ or ⇨ button.

5 Press the EXEC button.

After this, all printouts are made with a caption.

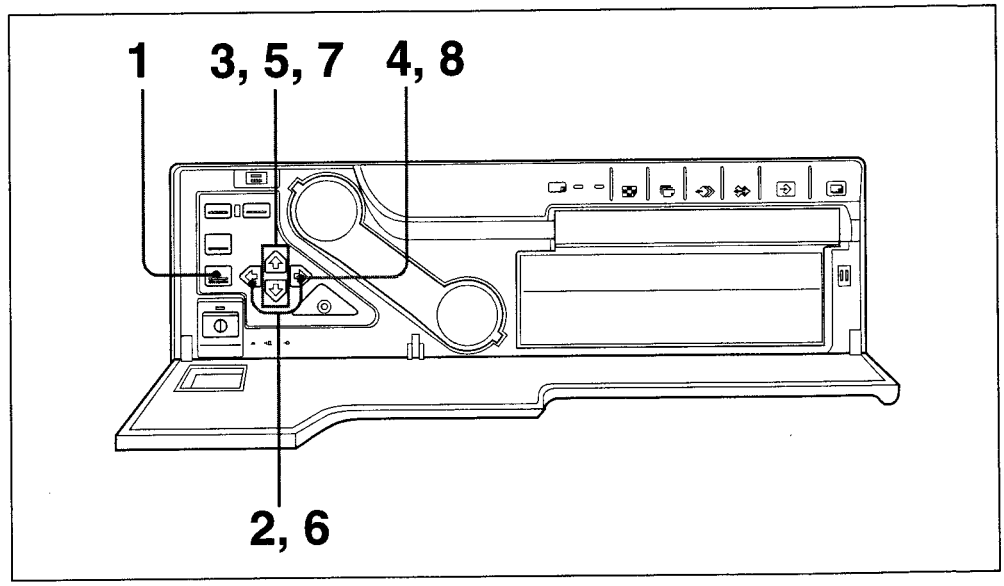
To make a printout without a caption

Select OFF in step 2.

Deleting the Images Stored to Memory Pages

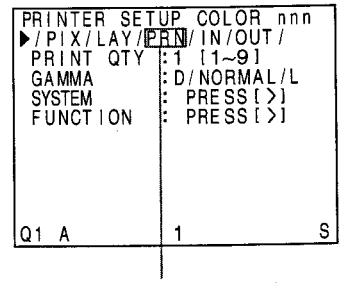
You can delete images captured to memory pages, form either all of memory pages or a single memory page, by using the CLEAR button.
Whether images of all memory pages or single memory page are deleted depends on the setting of CLEAR on the FUNCTION SETUP menu.

Setting the Function of the CLEAR Button



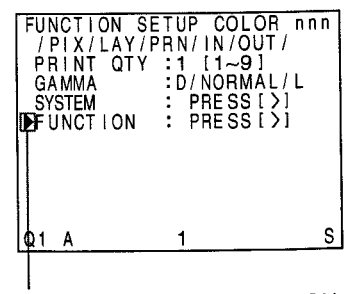
1 Press the MENU button.
The menu just before opened appears.

2 Select PRN by pressing the ⇦ or ⇨ button.



By switching PRN to green by pressing the ⇦ or ⇨ button, PRINTER SETUP appears.

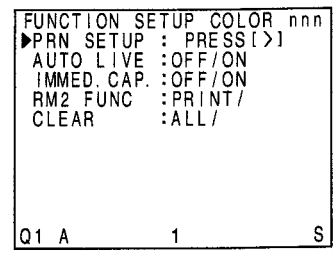
3 Select FUNCTION by pressing the ⇧ or ⇩ button.



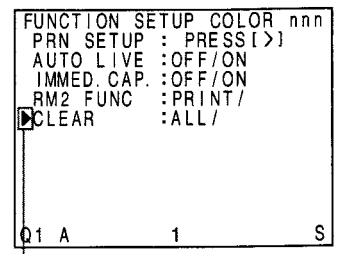
Position the cursor to FUNCTION by pressing the ⇧ or ⇩ button.

Continue to next page →

4 Press the ⇨ button.
The FUNCTION SETUP menu appears.

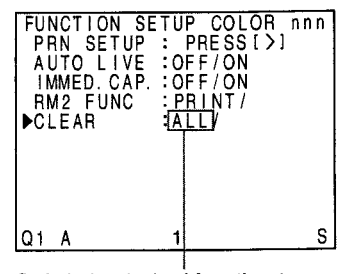


5 Select CLEAR by pressing the ⇧ or ⇩ button.



Position the cursor to CLEAR by pressing the ⇧ or ⇩ button.

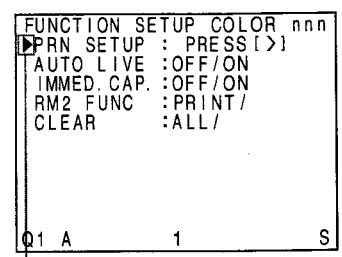
6 Select the function of the CLEAR button by pressing the ⇦ or ⇨ button.



Switch the desired function to green by pressing the ⇦ or ⇨ button.

Function of the CLEAR button	Settings
To deactivate the CLEAR button	OFF
To delete images of all memory pages	ALL
To delete images of a single memory page	PAGE

7 Select PRN SETUP by pressing the ⇧ or ⇩ button.



Position the cursor to PRN SETUP by pressing the ⇧ or ⇩ button.

8 Press the ⇨ button.
The PRINTER SETUP menu appears.
Once you set the function of the CLEAR button, the CLEAR button functions according to the setting until the function setting is changed.

To return to the regular screen

Press the MENU button.

Deleting Images

You can delete images captured to memory pages, either from all memory pages or a single memory pages.
If the source image is displayed on the video monitor, press the CLEAR button once so that the memory image will be displayed.

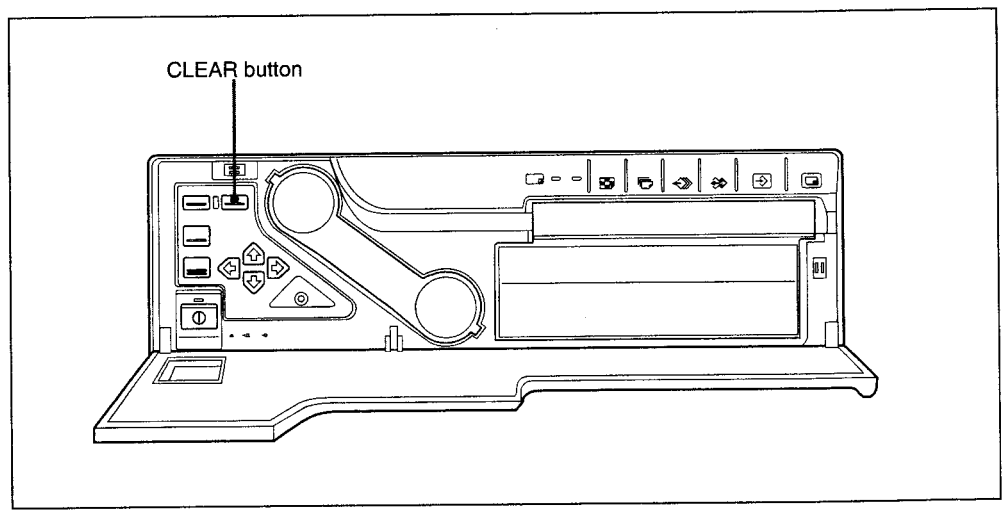
Deleting images in all memory pages simultaneously

Before deleting images in all memory pages

Set CLEAR to ALL on the FUNCTION SETUP menu.

Note

You cannot restore images once they have been deleted.

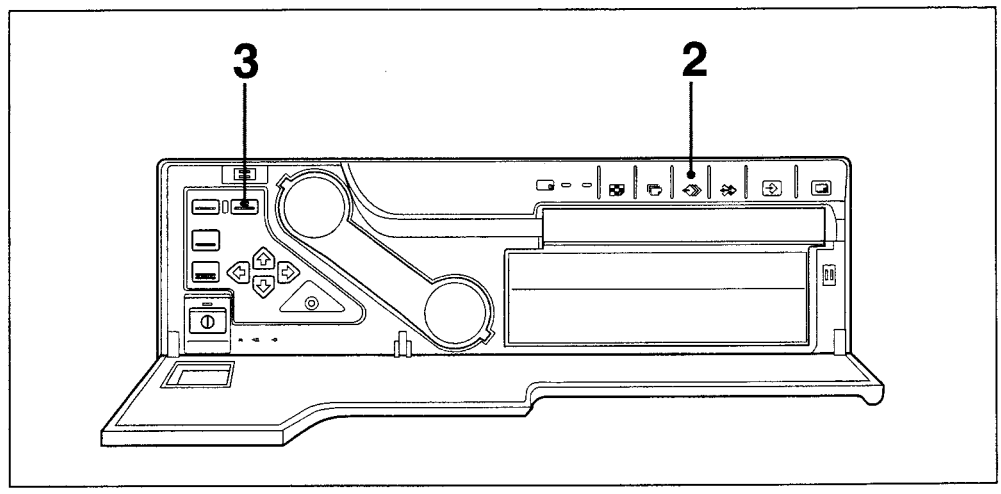


Press the CLEAR button.
All images stored in the printer are cleared.

Deleting images in a certain memory page

Before deleting images

Set CLEAR to PAGE on the FUNCTION SETUP menu.



1 Press the SOURCE/MEMORY button when the source image is displayed on the video monitor screen.
The image stored in memory is displayed on the screen.

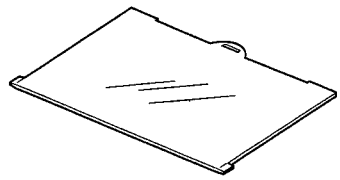
2 Select the memory page from which images are to be deleted by pressing the MEMORY PAGE button.

3 Press the CLEAR button.
The image in the memory page selected in the step 2 is deleted.

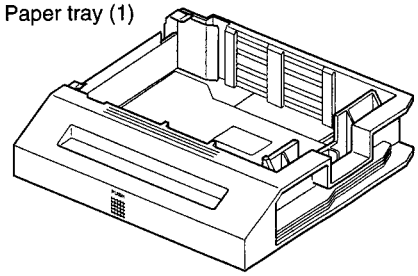
Supplied Accessories

The printer is packed together with the following accessories. Check that nothing is missing from your package.

Paper cover (1)



Paper tray (1)



AC power cord (1)
Color printing pack [a] (1)
Instructions for Use (1)

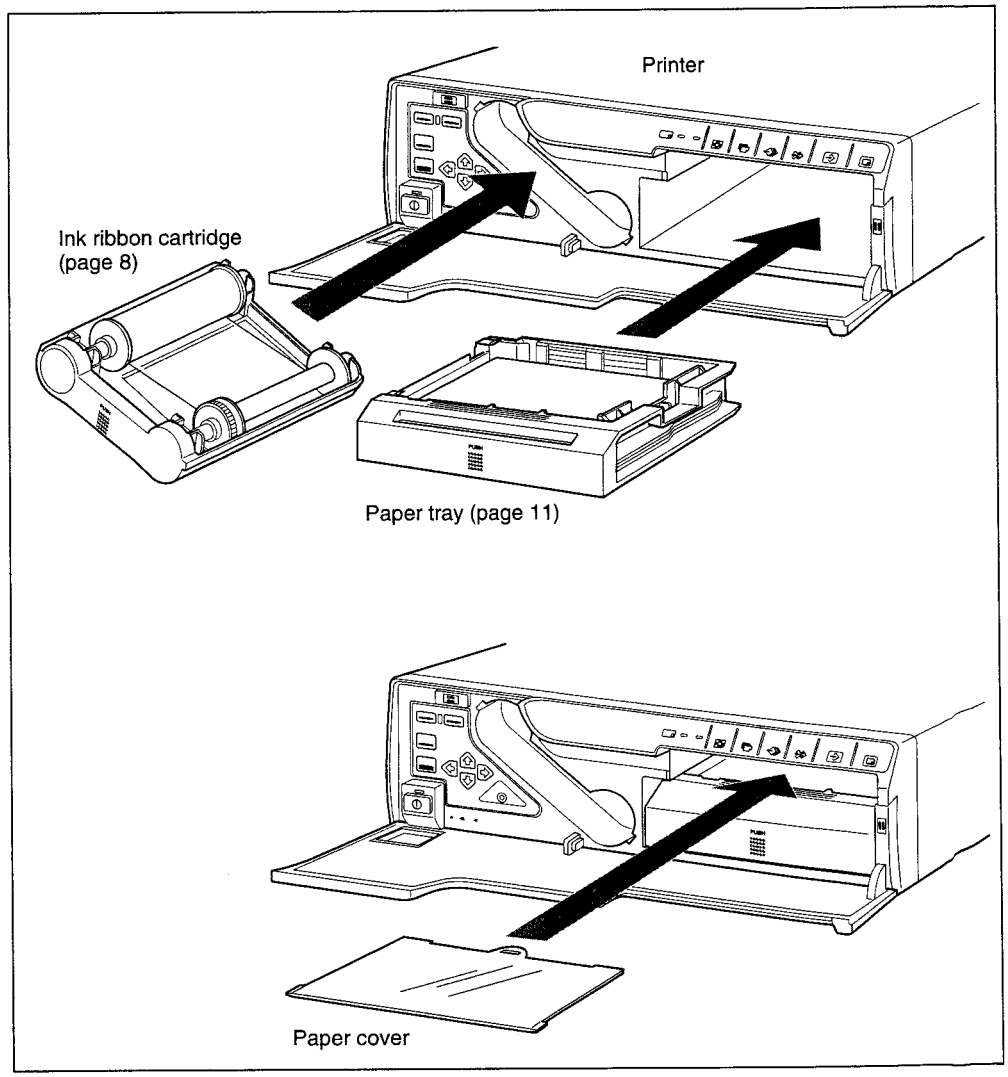
a) Use the ink ribbon cartridge and paper for operation check.

Notes

- Retain the original carton and packing materials in case you have to transport the unit in the future.
- Remove the ink ribbon cartridge and paper tray when transporting the printer.

Assembly

Attach the supplied paper cover, paper tray and ink ribbon cartridge to the printer. For details of how to assemble them, see the pages given in parentheses.



Ink Ribbon Cartridge and Paper

Both paper and an ink ribbon cartridge are necessary for printing. Use the ink ribbon with the paper contained in the same package.

UPC-2010 Color Printing Pack

Contains color ink ribbon cartridge and paper.
Color ink ribbon cartridge 1 roll
A-6 (4 ¼ × 5 ¾ inches) size paper 200 sheets

Note

You cannot use the self-laminating color printing pack and self-adhesive color printing pack for sticker with this printer.

Preparing the Remote Control Unit

The following remote control units (not supplied) allow you to control the printer remotely.

- RM-5500 Remote Control Unit: Used to connect to the REMOTE 1 connector
- RM-91 Remote Control Unit, FS-20/36 Foot Switch: Used to connect to the REMOTE 2 connector.

The operations to be remotely controlled by the above remote control units depend on the remote operation settings made with the FUNCTION SETUP menu. ("Selecting the Operating Mode for Automatic Printing Capabilities" page 65)

Using the RM-5500 remote control unit (not supplied)

The RM-5500 Remote Control Unit can be used either as a wireless type or wired type. The buttons on the remote control unit duplicate those on the front panel of the printer. (see "Front" page 82 and "Sub Panel" page 84)
You can use the remote control unit's buttons which have the same name as the one on the printer.

Inserting batteries

Install the batteries in the remote control unit before using it.

1 Remove the battery compartment cover.

2 Insert the two R6 (size AA) 1.5 V batteries.
Note the polarity. Be careful to insert the batteries correctly.

3 Replace the cover.

Battery life

The battery life depends on how much you use the remote control unit. Install fresh batteries as soon as you notice the unit's range becoming shorter.

Notes

When using the batteries:

- Remove the batteries from the remote control unit if you do not intend to use it for an extended period of time. The batteries may leak if you leave them in the remote control unit.
- Should the batteries leak, clean the battery case thoroughly with a soft cloth and install fresh batteries.
- Be careful to insert the batteries correctly. Note the polarity, as indicated inside the battery compartment.
- Replace exhausted batteries with fresh ones. Never mix a fresh battery with a used battery or with a different kind of battery.

Using the RM-5500 remote control unit (not supplied) as a wireless unit

When using the remote control unit as a wireless unit, aim the head of the remote control unit at the remote sensor on the printer. With fresh batteries, the range of the remote control unit is about 3 meters.

Using the RM-91/FS-20/36

The operation of the RM-91 Remote Control Unit (not supplied) and FS-20 Foot Switch (not supplied) can be controlled remotely by sending a pulse signal to the REMOTE 2 connector in addition to the remote operation setting on the FUNCTION SETUP menu.
FS-36 (not supplied) has three switches that have different functions.
For detailed information on how to use those switches, refer to the manual supplied with the FS-36.

Connections

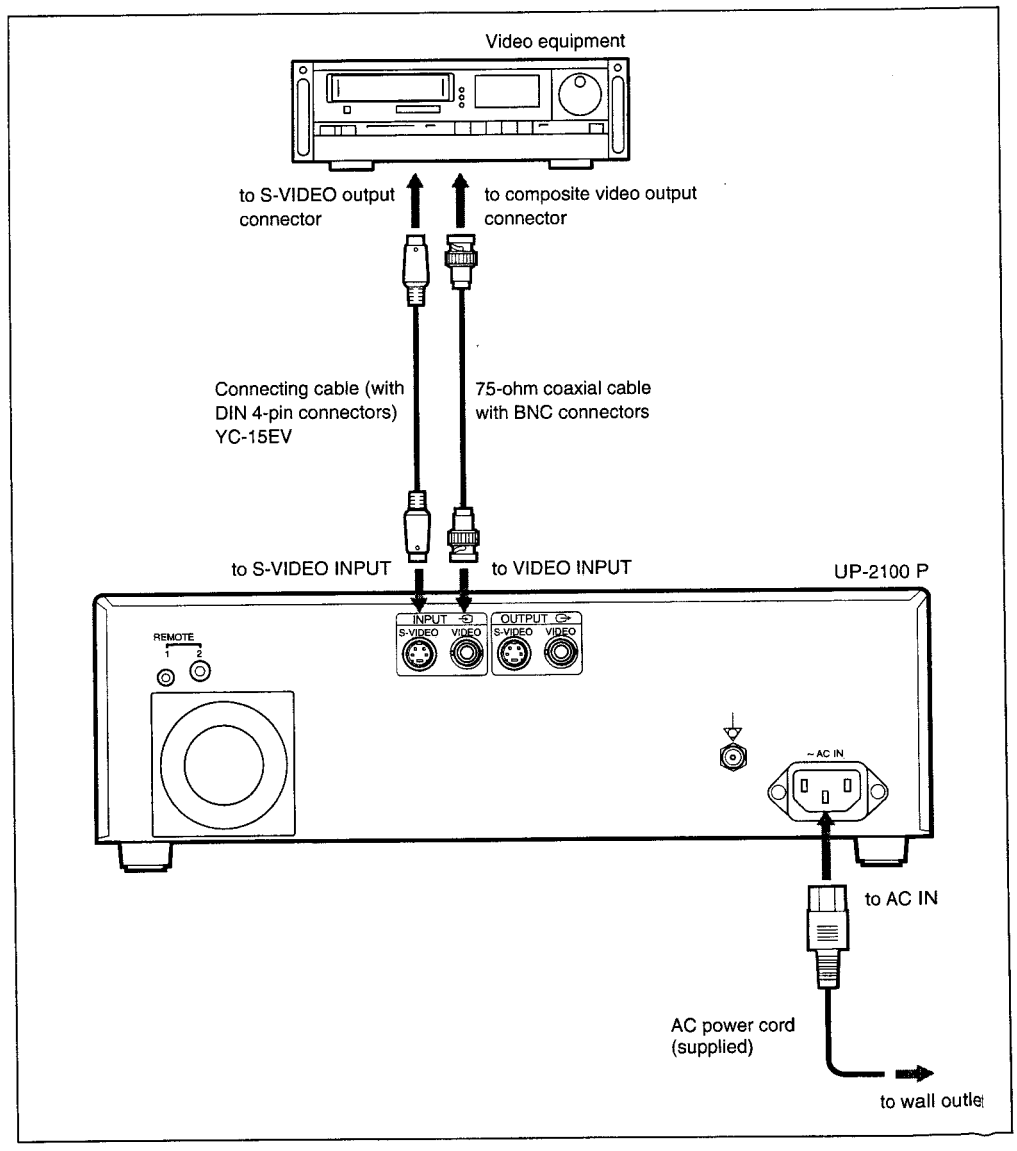
To enable printing, video equipment to act as an input signal source, and a video monitor to display images or menus must be connected.
The following diagrams illustrate how to make the input, output and remote control connections. Use this as a guide when connecting the necessary signals to and from the equipment to be used for printing.

Notes

- Turn off the power of each device before attempting to make any connections.
- Connect the AC power cord last.

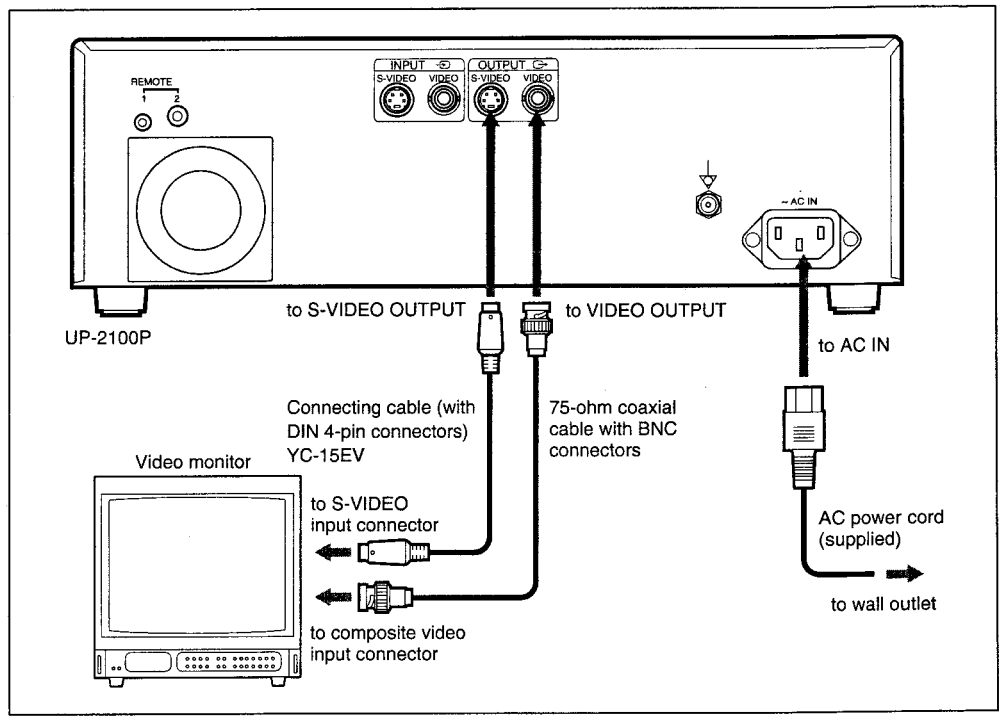
Making Connections for Storing Video Images

Connect the video equipment providing the video images to be printed.
Connect the video equipment which will be used in actual printing, using the following diagram as a guide.
Before connecting the video equipment, see "Important safeguards/notices for use in the medical environment" on page 2.



Making Connections for Viewing Images to be Printed

Connect a video monitor to view stored images and to check those to be printed. Connect the necessary video monitor which will be used in actual printing, using the following diagram as a guide.
Before connecting the video equipment, see "Important safeguards/notices for use in the medical environment" on page 2.



■ When the video monitor color does not match to that of a printout

It is difficult to image printout results because the video monitor color does not match to that of a printout. In such a case, the video monitor color may not be adjusted correctly even if the printer color is correctly adjusted. Check the color adjustment of the video monitor.
The printer outputs either of the following two kinds of video signals according to the printer setting described below.

- EE (E to E): Signals are output to the monitor after being processed by the printer's circuitry.
- THRU (THROUGH): Signals are output to the printer as is.
  Use the THROUGH signal to check the video monitor.
  When you select THRU, the signal flow inside the printer is as follows.
  — Signal input to the VIDEO IN connector → Outputs to the VIDEO OUT connector.
  — Signal input to the S VIDEO IN connector → Outputs to the S VIDEO OUT connector.

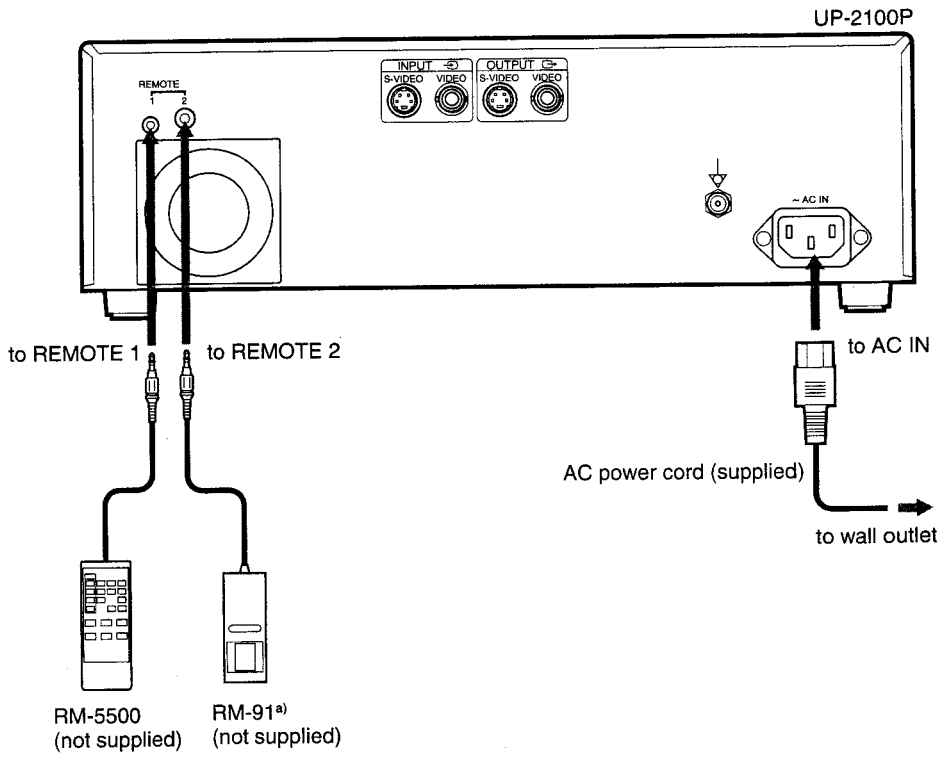
To set the printer output to THRU

1 Press the MENU button, then display the OUTPUT SETUP menu by pressing the ⇦ or ⇨ button.
2 Select SOURCE by pressing the ⇧ or ⇩ button.
3 Select THRU by pressing the ⇦ or ⇨ button.

For details of how to make adjustments using menus, see "Setting Up the Printer" on page 56.

Making Connections to Enable Remote Control

The printer can be controlled remotely by connecting the RM-5500 Remote Control Unit (not supplied), RM-91 Remote Control Unit (not supplied), or the FS-20/36 Foot Switch (not supplied).



a) Either FS-20 or FS-36 can be also connected to REMOTE 2.

Setting Up the Printer

You can set up the printer specification. Once you have adjusted and stored, the printer operates according to the setting until those values are modified. You can set up the printer according to the intended purpose, connected equipment or your individual preferences.

Menu	Functions to be set	Reference page
PICTURE ADJUST	Adjusting the sharpness.	59
LAYOUT SETUP	• Selecting the memory mode	26
	• Selecting the type of printouts	29
	• Selecting whether white borders are added to multiple reduced images.	31
CAPTION [a]	Entering a caption	40
WINDOW SETUP [a]	Changing the printout size/printout area.	62
PRINTER SETUP	• Setting the print quantity	18
	• Adjusting the tone of printout	60
SYSTEM SETUP [b]	• Selecting whether the operation and error tones sound.	71
	• Selecting the application mode (printer operation mode)	23
FUNCTION SETUP	• Selecting the image which appears after storing the image into memory, source image or memory image.	34
	• Selecting the timing of the pulse signal input to the REMOTE 2 connector	65
	• Selecting operation mode for automatic printing capabilities of remote commanders connected to REMOTE 2 connector.	67
	• Setting the function of the CLEAR button	45
INPUT SETUP	• Selecting the input signal	13
	• Compensating for the input signals.	57
OUTPUT SETUP	Erasing the screen display.	69

a) This menu is the sub menu of the LAYOUT SETUP menu.

b) This is the sub menu of the PRINTER SETUP menu.

This section explains the following settings and adjustments.

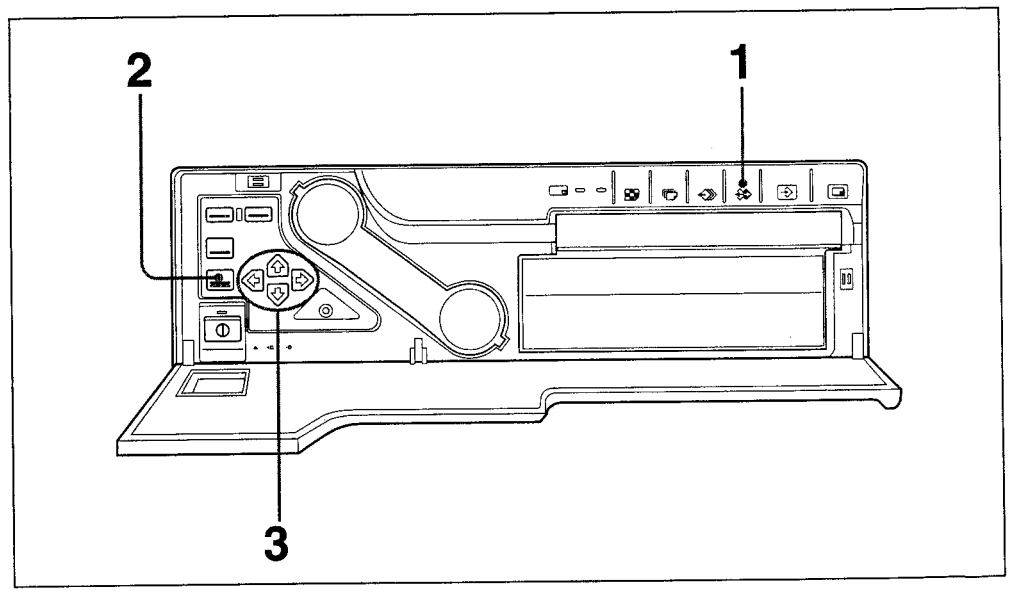
- Compensating for the input signals (page 57)
- Adjusting the sharpness (page 59)
- Adjusting the tone of the printout (page 60)
- Changing the printout size/printout area (page 62)
- Selecting the operating mode for automatic printing capability (page 65)
- Erasing the screen display (page 69)
- Selecting whether to enable the operation and error tones (page 71)

Compensating for the Input Signals

A video image recorded under poor conditions may be of poor color quality. If the signal is a PAL composite video signal or separate luminance (Y) and chrominance (C) signals, you can correct the color and level of the input signal to a certain extent on the INPUT SETUP menu.

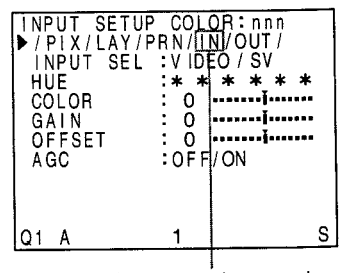
Note

You cannot adjust an image once it has been stored in memory. Restore an image after adjustment.



1 When the memory image is displayed on the screen, press the SOURCE/MEMORY button.
The image from the video source appears.

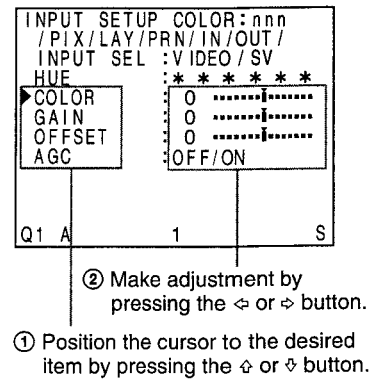
2 Press the MENU button, then select INPUT SETUP menu by pressing the ⇦ or ⇨ button.



Switch IN to green by pressing the ⇦ or ⇨ button. INPUT SETUP menu appears.

Continue to next page →

3 Perform the adjustments as follows.
① Select the adjustment item by pressing the ⇧ or ⇩ button.
② Perform the adjustment by pressing the ⇦ or ⇨ button.



To adjust the color intensity, hue and contrast

Adjustment	Menu adjustment item	Button and operation result	
		⇨ button	⇦ button
Color intensity	COLOR [a]	The color intensity strengthens.	The color intensity weakens.
Contrast	GAIN	The contrast strengthens.	The contrast weakens.
Brightness	OFFSET	Becomes brighter	Becomes darker

a) Adjust the color such that skin tones appear natural.

When the printout or monitor image appears blackish or whitish

Adjust the input signal to the optimum level for printing.

Menu adjustment item	Selection	When selecting
AGC (Automatic Gain Control)	ON	Normal (when the proper signal is input)
	OFF	When the printout or monitor image appears blackish or whitish.

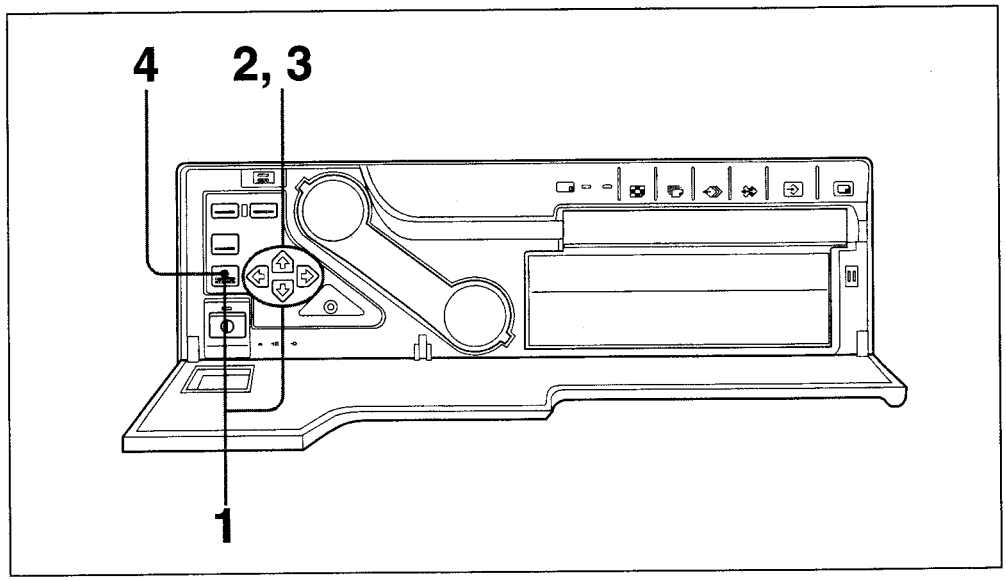
4 Press the MENU button.
The regular screen appears.

Adjusting the Printout Color

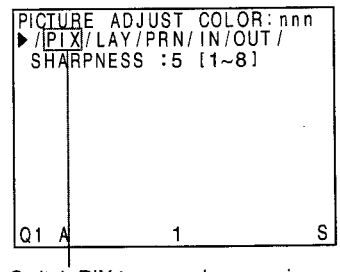
You can adjust the printout quality by adjusting sharpness and tone (GAMMA) of the printout.

Adjusting the sharpness

You can adjust printout sharpness.

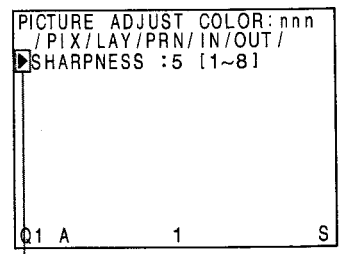


1 Press the MENU button, then select PICTURE ADJUST menu by pressing the ⇦ or ⇨ button.



Switch PIX to green by pressing the ⇦ or ⇨ button. PICTURE SETUP menu appears.

2 Select SHARPNESS by pressing the ⇧ or ⇩ button.

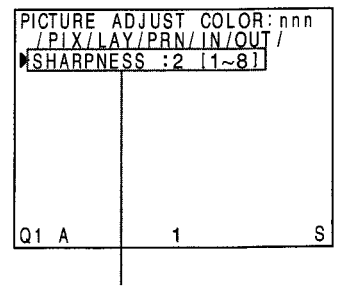


Position the cursor to SHARPNESS by pressing the ⇧ or ⇩ button.

Continue to next page →

3 Select the desired sharperss by pressing the ⇦ or ⇨ button.
You can set the sharpness to any of 8 steps from 1 to 8. A setting of step 5 corresponds to the standard sharpness.

When selecting	Content of settings
To make a soft outline	Toward step 1
To make a normal outline	Centered (step 5)
To make a sharp outline	To the right (toward step 8)

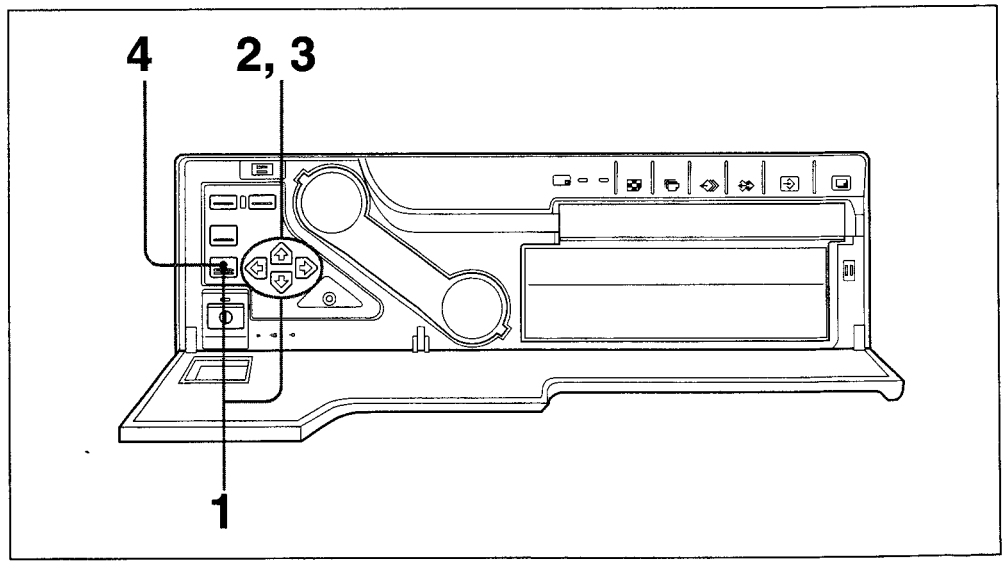


The number and the corresponding sharpness increase every time you press the ⇨ button.
The number and the corresponding sharpness decrease every time you press the ⇦ button.

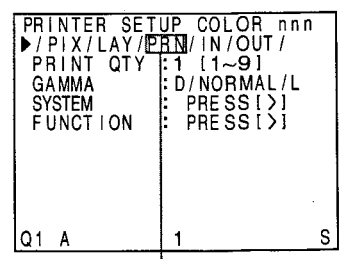
4 Press the MENU button.
The regular screen appears.

Adjusting the tone of the printout

You can adjust the tone so that the details in the white or black part is clearly printed.

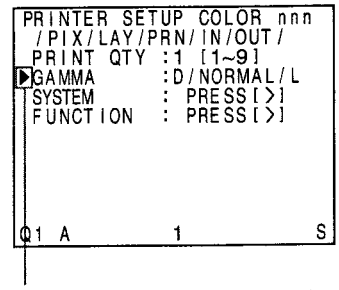


1 Press the MENU button, then select PRINTER SETUP menu by pressing the ⇦ or ⇨ button.



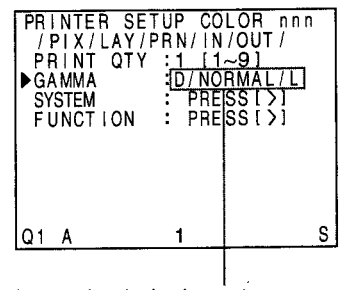
Switch PRN to green by pressing the ⇦ or ⇨ button. PRINTER SETUP menu appears.

2 Select GAMMA by pressing the ⇧ or ⇩ button.



Position the cursor to GAMMA by pressing the ⇧ or ⇩ button.

3 Select the desired tone by pressing the ⇦ or ⇨ button.



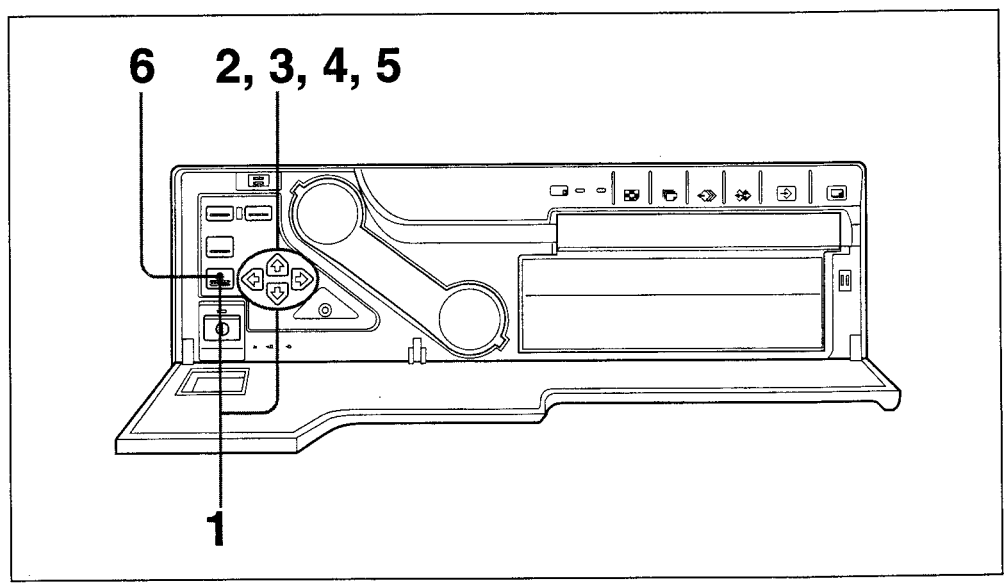
Switch the desired tone to green by pressing the ⇦ or ⇨ button.

When selecting	Setting
To make a printout of an image where there are a lot of white or light-colored areas.	DARKER
To make a printout of a normal image.	NORMAL
To make a printout of an image where there are a lot of black or dark-colored areas.	LIGHTER

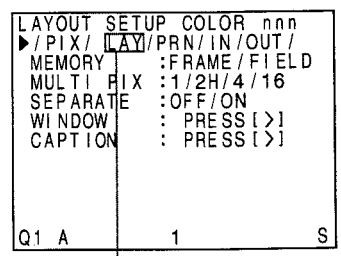
4 Press the MENU button.

Changing the Printout Size/Printout Area

When you print an image that is narrower or wider than the standard screen size, a black frame may be printed or the image may be partially cut. In such a case, you can change the screen size. Or, a black line may be produced on the printout even though it does not appear on the video monitor. Any portion for which there is no video signal is printed in black. This may occur when you make printouts after connecting a different video source or play back different video software. In such a case, you can adjust the printout area by moving the screen either horizontally or vertically. When a black frame appears around the printout, even after the printout area has been shifted, narrow the printout size because the image has been overscanned beyond the range of the regular screen.

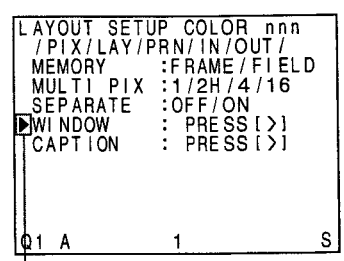


1 Press the MENU button, then select LAYOUT SETUP menu by pressing the ⇦ or ⇨ button.



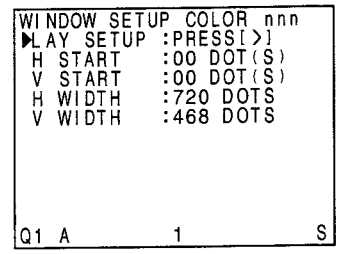
Switch LAY to green by pressing the ⇦ or ⇨ button. LAYOUT SETUP menu appears.

2 Select WINDOW by pressing the ⇧ or ⇩ button.



Position the cursor to WINDOW by pressing the ⇧ or ⇩ button.

3 Press the ⇨ button.
The WINDOW SETUP menu appears.

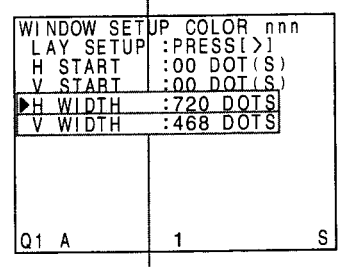


4 Adjust the printer according to the obtained printout.
① Select the item to be adjusted by pressing the ⇧ or ⇩ button.
② Perform the adjustment by pressing the ⇦ or ⇨ button.

When a black frame is printed or the image is partially cut

Adjust the printout size by using the H WIDTH and V WIDTH items from the menu.

Adjusting the printout size horizontally.



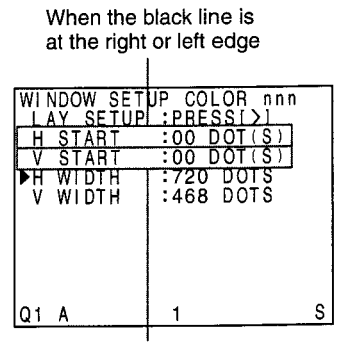
Adjusting the printout size vertically.

When selecting	Adjustment item	Button to be used	Adjustment result
To change the size, adjust the position of the right edge. The left edge remains fixed. (The screen size changes horizontally.)	H-WIDTH	⇨ button	Widened at the right edge.
		⇦ button	Narrowed with the left edge remaining fixed.
To change the size, adjust the position of the bottom edge. The top edge remains fixed. (The screen size changes vertically.)	V-WIDTH	⇨ button	Enlarged downwards.
		⇦ button	Vertical sized reduced with the top edge remaining fixed.

Continue to next page →

When a black line appears on the printout

Adjust the printout area according to the position of the line on the printout, by using the H START and V START items on the menu.



Position where the black line appears	Menu adjustment item	Button to be used	Adjustment result
On the right	H START (horizontal direction)	⇨ button	The image position shifts to the right with the size remaining as is.
On the left		⇦ button	The image position shifts to the left with the sized remaining as is.
At the top	V START (vertical direction)	⇨ button	The image position shifts up with the size remaining as is.
At the bottom		⇦ button	The image position shifts down with the size remaining as is.

To clear the adjusted value

Press the MENU button from the WINDOW SETUP menu. The adjusted values are cleared and the values are reset to the original ones.

Note

When a black line still appears, even after adjusting H START or V START, change the printout size.

5 Select LAY SETUP by pressing the ⇧ or ⇩ button, then press the ⇨ button. The adjusted values are stored. The LAYOUT SETUP menu appears.

6 Press the MENU button.
The regular screen appears.

To check the adjustment result

Cature a new image and print it to check that no black frame appears on the printout, that the image is not partially cut, and that no black line appears.

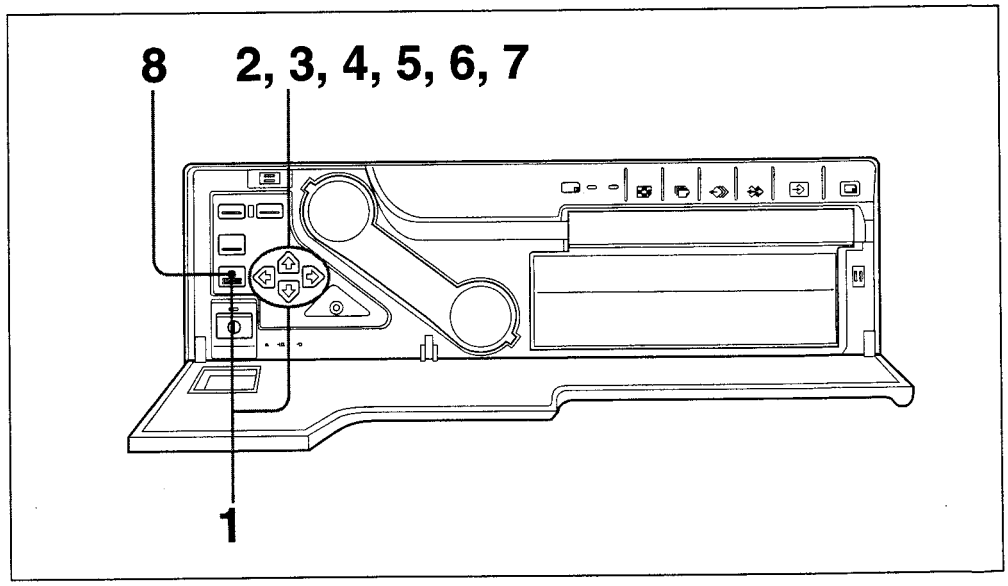
Selecting the Operation Mode for Automatic Printing Capabilities

You can control the printer with either of the following options.

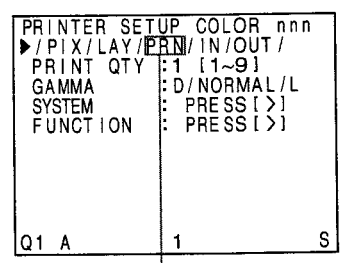
- RM-5500 Remote Control Unit (not supplied): Connected to REMOTE 1 connector
- RM-91 Remote Control Unit, FS-20/36 Foot Switch (not supplied): Connected to REMOTE 2 connector ("Making Connections to Enable Remote Control" page 55)

Using the menu, you can assign desired functions to the remote control unit connected to the REMOTE 2 connector.

In addition to the above, the printer can be remotely controlled by a pulse signal input to REMOTE 2. (see pages 76).



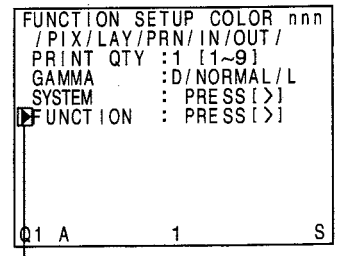
1 Press the MENU button, then select PRINTER SETUP menu by pressing the ⇦ or ⇨ button.



Switch PRN to green by pressing the ⇦ or ⇨ button. PRINTER SETUP menu appears.

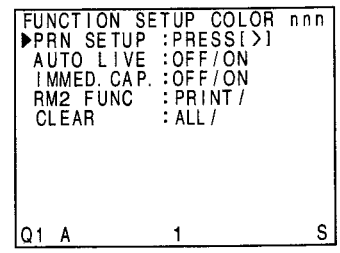
Continue to next page →

2 Select FUNCTION by pressing the ⇧ or ⇩ button.

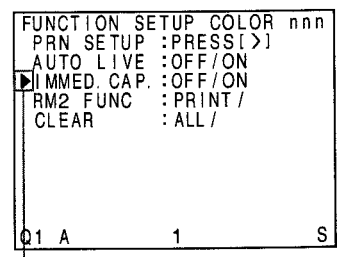


Position the cursor to FUNCTION by pressing the ⇧ or ⇩ button.

3 Press the ⇨ button.
The FUNCTION SETUP menu appears.

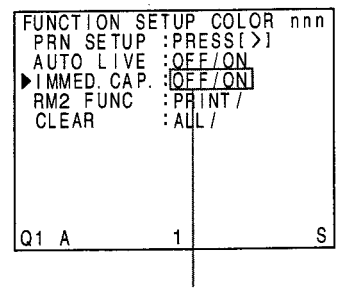


4 Select IMMED. CAP by pressing the ⇧ or ⇩ button.



Position the cursor to IMMED. CAP by pressing the ⇧ or ⇩ button.

5 Select the desired timing to capture the image by pressing the ⇦ or ⇨ button.



Switch the desired timing selection to green by pressing the ⇧ or ⇩ button.

Timing	Selection
To capture the image just after the CAPTURE command is received [a]	ON
To capture the image with the timing pulse input to REMOTE 2 connector [b]	OFF

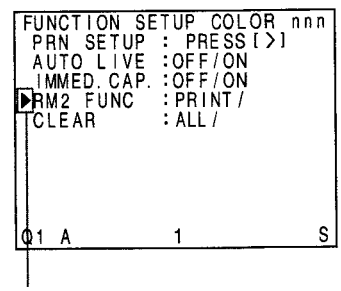
a) When IMMED. CAP is set to ON, display the source image on the video monitor when sending the timing pulse to the printer. The printer operation is only to capture the image when receiving the pulse.

b) For detailed information on the timing pulse to REMOTE 2 connector, see page 76.

Notes

- To control the printer remotely using the remote control unit, set the IMMED.CAP item on the FUNCTION SETUP menu to OFF.
- To send the puls signal on an accurate timing to the REMOTE 2 connector using a computer, set the IMMED.CAP item to ON.

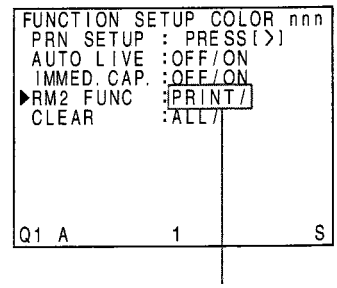
6 Select RM2 FUNC by pressing the ⇧ or ⇩ button.



Position the cursor to RM2 FUNC by pressing the ⇧ or ⇩ button.

Continue to next page→

7 Select the function that you want to assign to the remote control unit connected to the REMOTE 2 connector by pressing the ⇦ or ⇨ button.



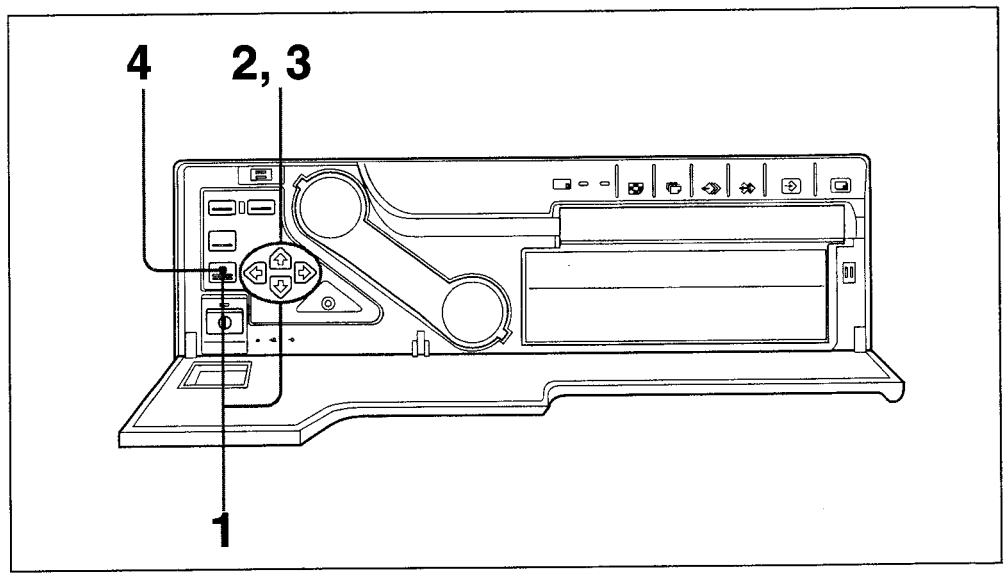
Switch the desired function to green by pressing the ⇧ or ⇩ button.
When > is displayed, another function can be selected by pressing the ⇨ button.
When < and > are displayed, another function can be selected by pressing either the ⇦ or ⇨ button.

Items to be selected	Operation
PRINT	Printing whenever you press the switch.
C & PRINT (CAPTURE & PRINT)	Capturing an image to a memory page and printing a memory image. If you press the switch while printing is being performed, the selected image is queued, with the queued image being printed once printing has been completed.
CYCLIC-C (CYCLIC CAPTURE)	Capturing images to memory pages cyclically whenever you press the switch. The printer continues to capture images, replacing that previously stored with a new one.
CAP-STOP (CAPTURE STOP)	Capturing images to a memory page. Once images have been captured to all the memory pages, the printer stops storing images and the message HIT ANY KEY appears.
BACK-SP (CAPTURE BACK)	The pointer (green) returns to its former position whenever you press the switch.
POINTER+	The pointer (green) moves to the next position whenever you press the switch.
STOP	Stopping printing whenever you press the switch. An paper which is currently being printed will be ejected.
CAP/SRC (CAPTURE/SOURCE)	When the source image is displayed, the image is captured to memory whenever you press the switch. When the memory image is displayed, the source image appears whenever you press the switch.
PRINT & PAGE	Starting to print when you press the switch if the image has been captured in the memory, and at the same time moving to the next memory page. If the image has not been captured in the memory page, the printer does not work correctly when you press the switch of the remote control unit.
SRC & CAP (SOURCE & CAPTURE)	When you press and hold down the switch of the remote conttrol unit, the source image appears on the monitor screen and captures the image at the instant you release the switch.

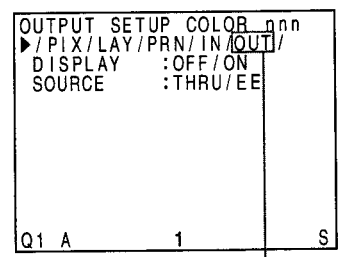
8 Press the MENU button.
The regular screen appears.

Erasing the Screen Display

You can erase a screen display with the menu when, for example, it is hard to see the image that is hidden behind the screen display . The printer operation is identical, regardless of whether screens are displayed.

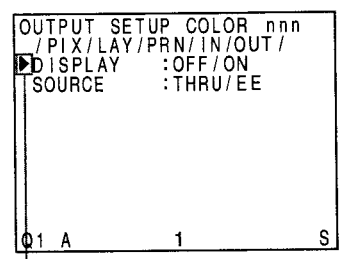


1 Press the MENU button, then select OUTPUT SETUP menu by pressing the ⇦ or ⇨ button.



Switch OUT to green by pressing the ⇦ or ⇨ button. OUTPUT SETUP menu appears.

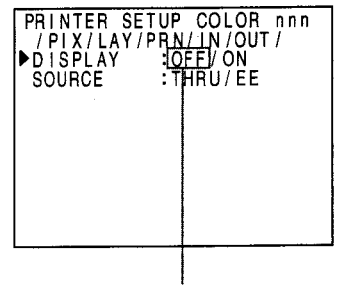
2 Select DISPLAY by pressing the ⇧ or ⇩ button.



Position the cursor to DISPLAY by pressing the ⇧ or ⇩ button.

Continue to next page→

3 Select OFF by pressing the ⇦ or ⇨ button.



Switch OFF to green by pressing the ⇦ or ⇨ button.

To display screen messages

Select ON in step 3.

Note

If you set the printer output signal specification to THRU (through), screen messages do not appear, even when you switch ON to green. However, error messages can appear at any time.

4 Press the MENU button.
The regular screen appears.

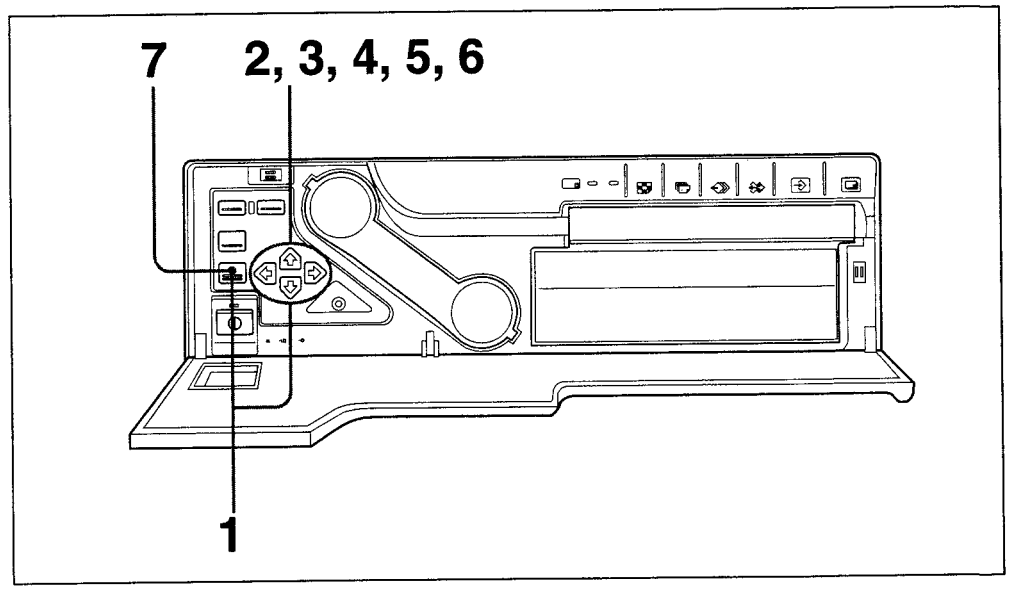
To temporarily erase the monitor display

When the MENU screen arrears: While the DISPLAY OFF button on the sub panel is held down, the screen display disappears, even if DISPLAY OFF is set to ON. Upon releasing the DISPLAY OFF button, the screen display appears again.

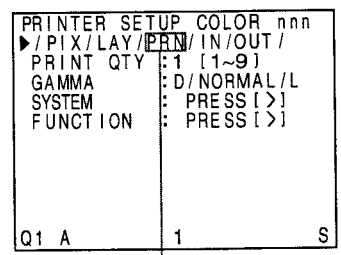
When the regular screen arrears: The screen messages switches on the and off whenever you press the DISPLAY OFF button, regardless of the menu setting on the OUTPUT SETUP menu.

Selecting Whether the Operation and Error Tones Sound

Whenever you press a button on the front panel or sub panel, the operation tone sounds (one time). When an error occurs, the alarm tone sounds (three times). You can turn these tones on and off with menu.

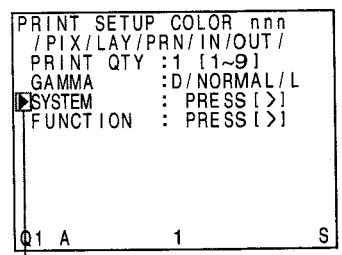


1 Press the MENU button, then select PRINTER SETUP menu by pressing the ⇦ or ⇨ button.



Switch PRN to green by pressing the ⇦ or ⇨ button. PRINTER SETUP menu appears.

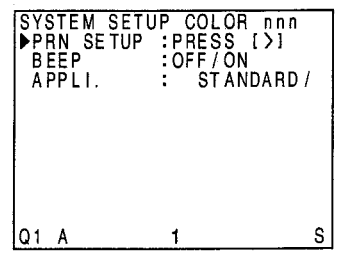
2 Select SYSTEM by pressing the ⇧ or ⇩ button.



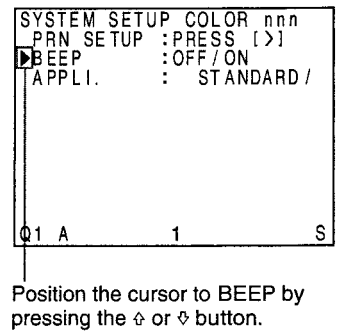
Position the cursor to SYSTEM by pressing the ⇧ or ⇩ button.

Continue to next page →

3 Press the ⇨ button.
The SYSTEM SETUP menu appears.

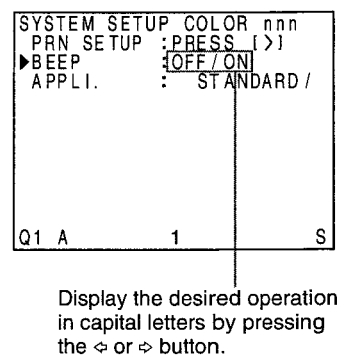


4 Select BEEP by pressing the ⇧ or ⇩ button.



5 Select whether the operation and error tones sound by pressing the ⇦ or ⇨ button.

When selecting	Selection
To disable the tones	OFF
To sound the tones	ON



6 Select PRN SETUP by pressing the ⇧ or ⇩ button, then press the ⇨ button.
The adjusted values are stored. The PRINTER SETUP menu appears.

7 Press the MENU button.
The regular screen appears.

Precautions

Safety

- Operate the printer using the power source specified in "Specifications" (page 75)
- Be careful not to damage the power cable by placing or dropping heavy objects on it; it is dangerous to use the unit with a damaged power cable.
- If you do not intend to use the unit for a long time, disconnect the power cable.
- Unplug the power cable by grasping the plug, not the cable itself.
- Do not disassemble the unit.
- Do not remove the cover. There is a danger of electric shock from the internal parts.
- Be careful not to spill water or other liquids on the unit, or to allow combustible or metallic material to enter the cabinet. If used with foreign matter in the cabinet, the unit is liable to fail, or present a risk of fire or electric shock.
- Ventilation holes are provided to prevent the unit from overheating. Be careful not to obstruct them with other units or by covering the unit with a cloth etc.
- If the unit malfunctions or if a foreign body falls into the cabinet, disconnect the power immediately and consult your Sony service facility or your Sony dealer.
- Do not open the top cover of the printer during printing because of mechanical hazard. If you do, turn off the power switch first.

Installation

- Avoid placing the unit in a location subject to:
  — mechanical vibration
  — high humidity
  — excessive dust
  — direct or excessive sunlight
  — extremely high or low temperatures
- Do not use other electronic equipment near the unit. The unit will not work properly in strong electromagnetic fields.
- Do not place a heavy object such as a monitor on the printer.

Condensation

- If the printer is subject to wide and sudden changes in temperature, such as when it is moved from a cold room to a warm room or when it is left in a room with a heater that tends to produce large amounts of moisture, condensation may form inside the printer. In such cases the printer will probably not work properly, and may even develop a fault if you persist in using it. If condensation forms, turn off the power and leave the printer to stand for at least one hour.
- If the printing pack is subjected to wide and sudden changes in temperature, condensation may form on the ink ribbon or paper. This will cause the printer to malfunction. Also, if the printing pack is used in this state, spots are likely to appear on the printout. Therefore, avoid storing the printing pack in locations subject to wide and sudden changes of temperature.
- To store a half-used printing pack, replace it in its original packing and reseal the package. If possible, keep the sealed printing pack in a cool, dark location. To subsequently use the printing pack, place it, in its sealed package, in a warm room for several hours. Doing so prevents condensation from forming when the printing pack is removed from its package.

Location

To prevent internal heat built-up, leave enough room around the printer for air to circulate through the vents on the left hand side of the cabinet.

On transportation

Do not transport the printer with the supplied accessories. Doing so may cause malfunction.

Cleaning

Clean the cabinet, panel and controls with a soft dry cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, which may damage the finish.

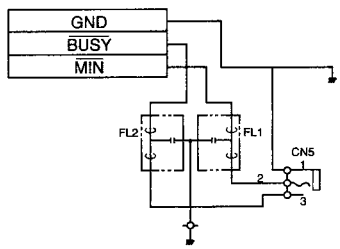
Specifications

Power requirements
220 to 240 V AC, 50/60 Hz
Power consumption
About 1.0 A max. at 25°C, 240 V AC
Operating temperature
5°C to 35°C (41°F to 95°F)
Operating humidity
20 % to 80 % (no condensation allowed)
Storage and transport temperature
–20°C to 60°C (–4°F to 140°F)
Storage and transport humidity
20 % to 90 % (no condensation allowed)
Dimensions About 370 × 125 × 417 mm (w/h/d) (14 5/8 × 5 × 16 3/4 inches)
Mass About 14 kg (15 lb 14 oz)
Printing system
Sublimation heat transfer printing
Thermal head 7.2 dot/mm (608 dots)
Total gradation
256 levels each for yellow, magenta, and cyan
Printing time Approximately 60 seconds
TV system PAL B.G.I standards
Input connectors
S VIDEO (Separate luminance (Y) and chrominance (C) signals):
4-pin mini-DIN × 1
Y: 1 Vp-p
C: 0.3 Vp-p color burst
75 ohms (terminated), sync negative
VIDEO (PAL composite video signal):
BNC connector × 1
1 Vp-p, 75 ohms (terminated), sync negative
AC IN (for power input)
Output connectors
S VIDEO (Separate luminance (Y) and chrominance (C) signals):
4-pin mini-DIN × 1
Y: 1 Vp-p
C: 0.3 Vp-p color burst
75 ohms (terminated), sync negative
VIDEO (PAL composite video signal):
BNC connector × 1
1 Vp-p, 75 ohms (terminated), sync negative
Controls connectors
REMOTE 1 : special mini jack × 1
For RM-5500 Remote Control Unit (not supplied)
REMOTE 2 (automatic printing connector):
Stereo mini jack : × 1
For RM-91 Remote Control Unit or FS-20/36 Foot Switch (not supplied) (see "Selecting the Operation Mode for Automatic Printing Capabilities" page 65)
Supplied accessories
Color printing pack (1)
Paper tray (1)
Paper cover (1)
AC power cord (1)
Instructions for Use (1)
Optional accessories
Color printing pack UPC-2010
RM-5500 remote control unit
RM-91 remote control unit
FS-20 foot switch
FS-36 foot switch

Using the automatic printing capabilities (REMOTE 2)

If you send the remote control pulse signals illustrated through the REMOTE 2 connector, the printer is remotely controlled according to the remote control setting. (see page 65)
Turn on the power of the printer and display the source image on the monitor screen. Send a remote control pulse signal at the timing shown below. The timing depends on the setting on item IMMED. CAP of the FUNCTION SETUP menu.

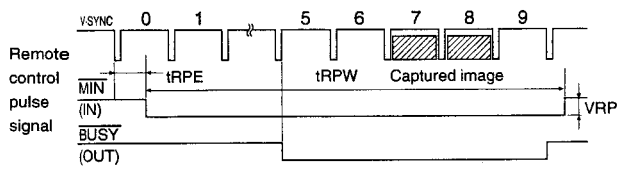
Remote 2 connector pin assignment



Note

The remote control pulse signal examples introduced here are one of the typical operation timing. The timing may be affected due to the selected memory page and print type.

When IMMED. CAP. is set to OFF

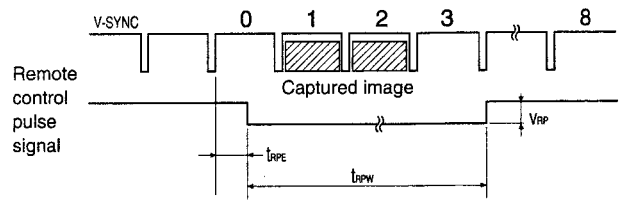


Notation	Parameter	MIN	TYP	MAX	Unit	Remarks
tRPE	Time within which a remote control pulse should be cleared to zero.	3	—	12	msec	—
tRPW	Length of a remote control pulse.	100	—	—	msec	—
VRP	Amplitude of a remote control pulse.	—	—	5	V	This value is based on TTL standards.

Note

When AUTO LIVE of the FUNCTION-SETUP menu is set to OFF, the memory image is displayed on the screen after the image is captured in memory. In such a case, whenever you store the image, press the SOURCE/MEMORY button so that the source image appears on the video monitor. Displaying the memory image does not allow to capture the image with the correct timing.

When IMMED. CAP. is set to ON



Notation	Parameter	MIN	TYP	MAX	Unit	Remarks
tRPE	Time within which a remote control pulse should be cleared to zero.	3	—	10	msec	—
tRPW	Length of a remote control pulse.	100	—	—	msec	—
VRP	Amplitude of a remote control pulse.	—	—	5	V	This value is based on TTL standards.

Note

This mode is effective only the source image is displayed on the monitor screen. If the memory image is displayed, the image will not be captured even if the pulse is sent to the printer. Be sure to display the source image when sending the pulse.

Design and specifications are subject to change without notice.

Error/Warning Messages

There are two kinds of messages: error messages and warning messages. This section lists these messages together with their possible causes and remedies. Note the messages and act accordingly.

Error messages

If a problem occurs, the ALARM lamp lights orange and an error message stating the problem appears on the monitor.

Message	Possible cause and remedies
MECHA TROUBLE: HEAD	• The ink ribbon cartridge is not loaded correctly → Check the ink ribbon cartridge and load it correctly. (page 8) • The paper has jammed inside the printer. → Check the position where paper has jammed and remove any jammed paper from the printer. (page 79)
MECHA TROUBLE: TRAY	The paper tray has got out of position. → Contact your Sony service facility or your Sony dealer to clear error status.
MECHA TROUBLE: PLATEN MECHA TROUBLE: LOAD MECHA TROUBLE: EJECT MECHA TROUBLE: CHUCK	The paper has jammed inside the printer. → Check the position where paper has jammed and remove any jammed paper from the printer. (page 79)
CHECK RIBBON	• The ink ribbon cartridge is defective. → Replace the defective ink ribbon cartridge with the new one. (page 8) • The ink ribbon has torn. → Repair the tear. (page 10) • The ink ribbon cartridge that can not be used with this printer has been loaded. → Load the appropriate ink ribbon cartridge. (page 50)
PAPER JAMMING	The paper has jammed inside the printer. → Check the position where paper has jammed and remove any jammed paper from the printer. (page 79)
SENSOR TROUBLE	Sensor trouble has occurred. → The printer must not be operated any further. Turn off the power immediately and contact your Sony service facility or your Sony dealer.
REMOVE PAPER COVER	The paper jammed around the top cover. → Open the top cover and remove any jammed paper. (page 79)
END OF RIBBON	The ink ribbon has been exhausted. → Replace the old one with a new ink ribbon cartridge. (page 8) (The ink ribbon cannot be reused.)
INSERT RIBBON	The ink ribbon cartridge is not loaded. → Load the ink ribbon cartridge. (page 8)
SET PAPER	• Paper has been exhausted. → Load the paper. (page 11) • The paper tray is not installed. → Install the paper tray. (page 11)

Continue to next page →

Error/Warning Messages (continued)

Message	Possible cause and remedies
INSERT RIBBON AND PAPER	The ink ribbon cartridge and paper are not loaded. → Load the ink ribbon cartridge and paper. (pages 8 and 11)
REMOVE PRINTS	The maximum number of printouts has accumulated on the paper cover. → Remove the printouts from the paper cover. (page 79)
REMOVE PAPER: TRAY	The paper jams around the paper tray as it is being fed into the ribbon area. → Remove any jammed paper. (page 79)
CLOSE COVER	The top cover opens → Close the top cover.

Warning messages

In the case of a warning, only warning messages appear. The ALARM lamp does not light.

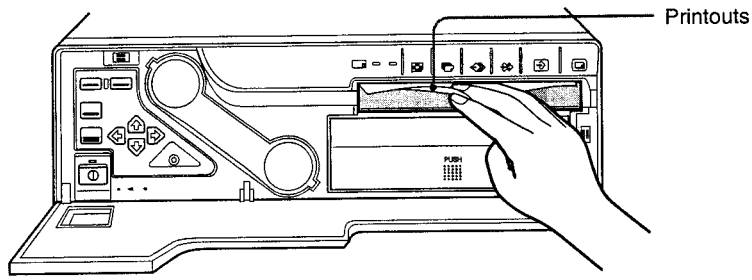
Warning message	Possible causes and remedies
PLEASE WAIT NOW PRINTING	The printer is printing, preventing any other operation. → Wait until the printer finishes printing, then retry the operation.
HIT ANY KEY	This message appears when the remote control unit is used in CAPTURE STOP mode and when the printer stops capturing images to memory pages once images have been captured to all memory pages. → Press any button. Printer operation is enabled after this.
INPUT MISMATCH	• The TV system of the signal input from the source equipment (VTR, video camera and so on) is not compatible with the TV system of your printer. → Check the signal of TV system and input the correct one. • The signal other than the video signal (such as audio signal and similar) is input. → Input the correct video signal.
PLEASE WAIT RESERVED MEMORY	Printing is queued for the selected memory page. → Retry the operation once the printer finishes printing.
PLEASE WAIT PRINTING MEMORY	The image captured in the selected memory page is being printed. → Retry the operation once the printer finishes printing.
NO INPUT	The printer is not receiving an input signal from equipment corresponding to the input selected on the INPUT SETUP menu. → Check the input signal selected on the INPUT SETUP menu. (page 13) → Check whether the video equipment is outputting a video signal in playback mode. → Check that the connections between signal source equipment and the printer are secure. (page 53)
NO IMAGE	The image is not captured in memory. → Capture the image in memory then start printing. (page 15)
PLEASE WAIT HEAD IN COOLING	The thermal head has overheated. → Leave the printer until the head cools down and this message disappears. The printer starts printing automatically.
PLEASE WAIT SET IN COOLING	The inside of the printer has overheated. → Leave the printer until its inside cools down and this message disappears. The printer starts printing automatically.

If the paper jams

If the paper jams after pressing the PRINT button, the message stating that paper jammed appears on the video monitor.
Follow the steps below to remove the jammed paper.
When the jammed paper is removed, you do not need to continue operation explained below. Stop operation and reset removed paper cover, paper tray or ink ribbon holder if any.

1 Open the front panel.

2 If any printouts have been ejected to the paper cover and have accumulated on the paper cover, remove them. If not go to the next step.



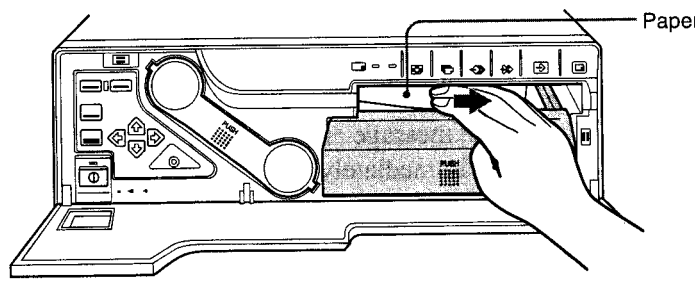
3 Turn off the power of the printer.

4 Remove the paper tray.
When you can see paper inside the printer, go to step 5.
When you cannot see paper, go to step 8.

5 Slowly pull the paper into the paper tray.

Note

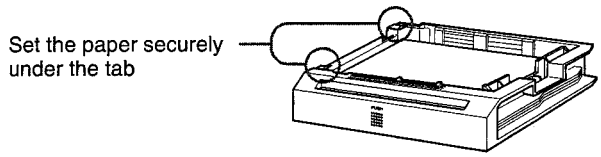
Never attempt to pull a jammed paper down, up, backwards, or forwards, the paper may tangle or tear.
If you cannot pull the paper, go to the next step.



6 Remove the paper tray.
If the paper has jammed around the slot where the paper is fed, remove it.

Continue to next page →

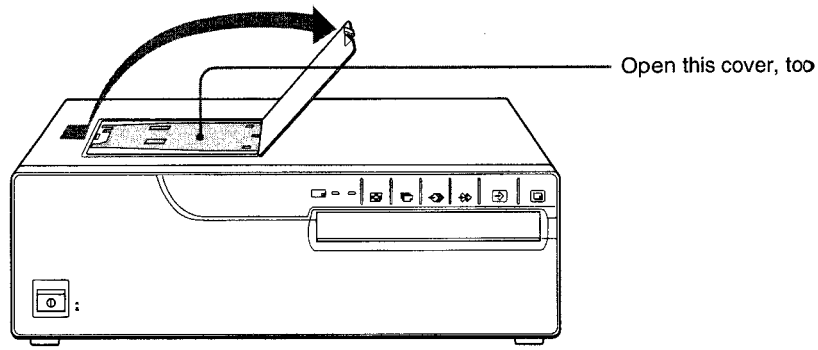
7 Load the paper into the paper tray correctly.
Do not reuse the paper put back in step 5. Discard that paper.



8 Remove the ink ribbon cartridge.
If there is a jammed paper, slowly pull out the paper.
If the ink ribbon cartridge cannot be removed, the printer must not be operated. Contact your Sony service facility.

When you cannot see the jammed paper, go to step 9.

9 Open the top white cover, then the black cover.
If the paper has jammed inside, slowly pull the paper out.
If the jammed paper cannot be removed, the printer must not be operated. Contact your Sony service facility.



10 Re-insert the removed paper tray, paper cover or ink ribbon cartridge if you removed, then close the front panel.

11 Turn on the power of the printer.
When the message does not appear, you can use the printer as normal.
However, the image captured to memory have been cleared. Capture the image to memory again.
If the same message appears again, the printer must not be operated. Turn off the power immediately and contact your Sony service facility.

Note

Do not open the top cover during printing because of mechanical hazard. If you do, turn off the power switch of the printer.

Troubleshooting

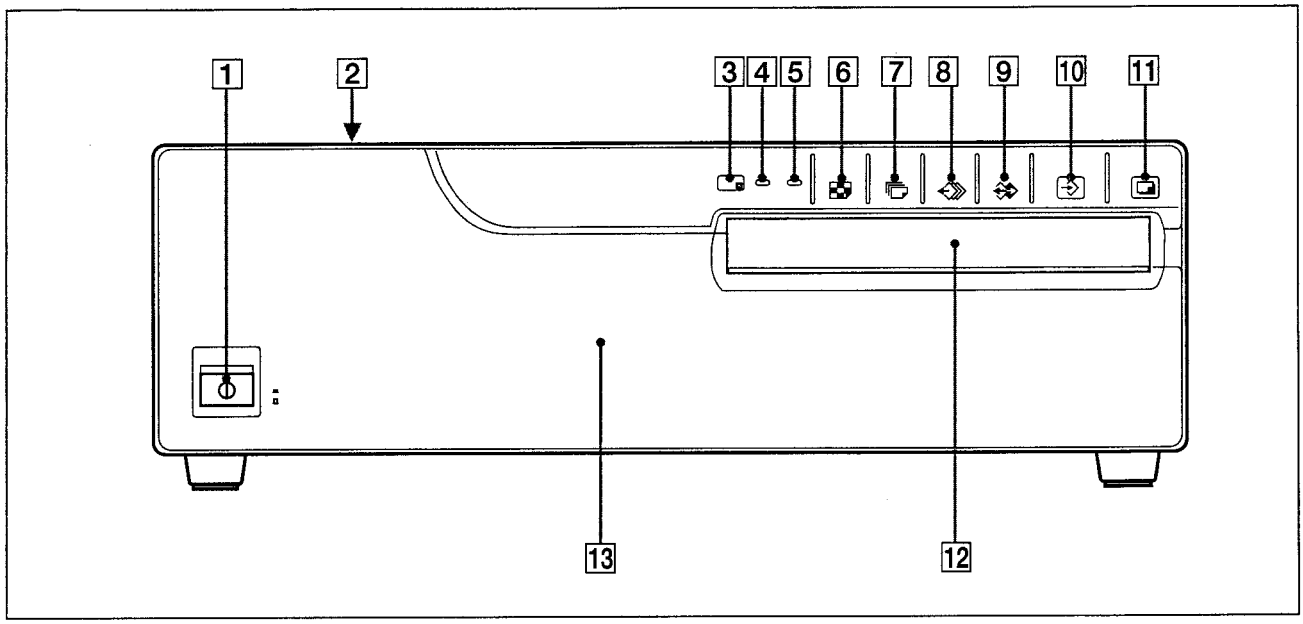
The following troubleshooting checks will help you correct the most common problems you may encounter with your unit. Before proceeding with these trouble checks, first check that the power cord is firmly connected. Should the problem persist, unplug the unit and contact your Sony dealer or local authorized Sony service facility.

Symptoms	Possible causes and remedies
Nothing appears on the monitor even if you press any operation buttons.	• The POWER switch of the printer is not set to ON. → Set the POWER switch of the printer to ON. • The POWER switch of the monitor is not set to ON. → Set the POWER switch of the monitor to ON. • Connections may not be correct. → Check connections and rectify, if necessary. (see page 53)
No message appears on the regular screen.	The incorrect signal is input. In this case, first check the monitor by pressing the SOURCE/MEMORY button to display the image stored in memory. If an image appears, the monitor is working correctly. → Select another input signal by using the INPUT SETUP menu (see page 13) Or, set the connected video equipment to playback mode, if it is currently set to another mode such as stop mode.
No message or image appears on the regular screen.	If an image captured in memory appears when the SOURCE/MEMORY button is pressed, SOURCE on the OUTPUT SETUP menu is set to THRU. → Change the SOURCE setting to EE. (see page 54)
The printer does not print.	An error message appears on the display. → Perform the steps described in "Error Messages" on page 77.
A black line appears on the printout.	Any portion for which there is no signal is printed in black. → Shift the printout area. Capture a new image and print it. (see page 62)
The printer produces a printout with a black frame.	Any portion for which there is no signal is printed in black. → Make the printout narrower. Capture a new image and print it. (see page 62)
The printed image is partially cut out.	Only part of the video signal has been stored. → Make the printout size wider. (see page 62) Capture a new image and print it.
The printout is blurred.	A quickly moving image has been stored. → Set MEMORY on the LAYOUT SETUP menu to FIELD.
The printout color is very pale.	The paper is not loaded correctly. → Check which side of the paper is the printing side, then load the paper again. (see page 11).
Characters of a caption is deformed.	FIELD of the memory mode is selected, or DUP1 of the printer application mode is selected. → Select FRAME or change the printer application mode from DUPLICATE to STANDARD. (see pages 23 and 26)

Location and Function of Parts and Controls

For details, refer to the pages given in parentheses.

Front



1 **⏻ POWER switch (13)**
Press to turn the printer on or off.

2 **Top cover (on the top panel)**
Usually, do not open this top cover. Only in case the paper has jammed inside the top cover, open the top cover to remove a jammed paper.
If you open the top cover, there is the other black cover.

3 **Remote sensor (52)**
Aim the head of the remote control unit toward this sensor.

4 **PRINT lamp**
Lights while the printer is printing.

5 **ALARM lamp (77)**
Lights in orange when the ink ribbon or paper is exhausted, the paper jams, or another problem occurs.

6 **MULTI PICTURE button (32, 37)**
Press this button to select the desired printout type. When you press this button, the currently selected printout type lights green for two or three seconds. Each time you press this button, the type lights green in the order.

7 **PRINT QTY (quantity) button (20)**
Press this button to set the number of copies. You can set any number up to 9. You can change the number even when the printer is printing.
However, you cannot decrease the number of copies using this button. In such a case, reduce the number of copies on the PRINTER SETUP menu.

8 **MEMORY PAGE button (21, 28, 48)**
Press to select the memory page.

9 **SOURCE/MEMORY button (16, 36, 38, 48)**
Press to select which signal is to be output to the monitor.
The memory image and source image are toggled each time you press this button.

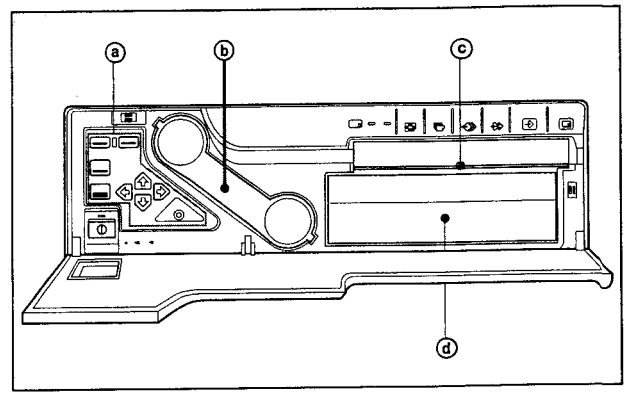
10 **CAPTURE button (16, 21, 36, 37, 38)**
Press to capture an image to a memory page.

11 **PRINT button (16, 17, 21, 37, 38)**
Press to make a printout.

12 **Paper ejection slot**
The printout is ejected here.

13 **Front door**
Pull the top on the front door toward you to open it.
Opening the front panel reveals the sub panel buttons, ink ribbon cartridge, paper tray and paper cover.

When the front panel is open



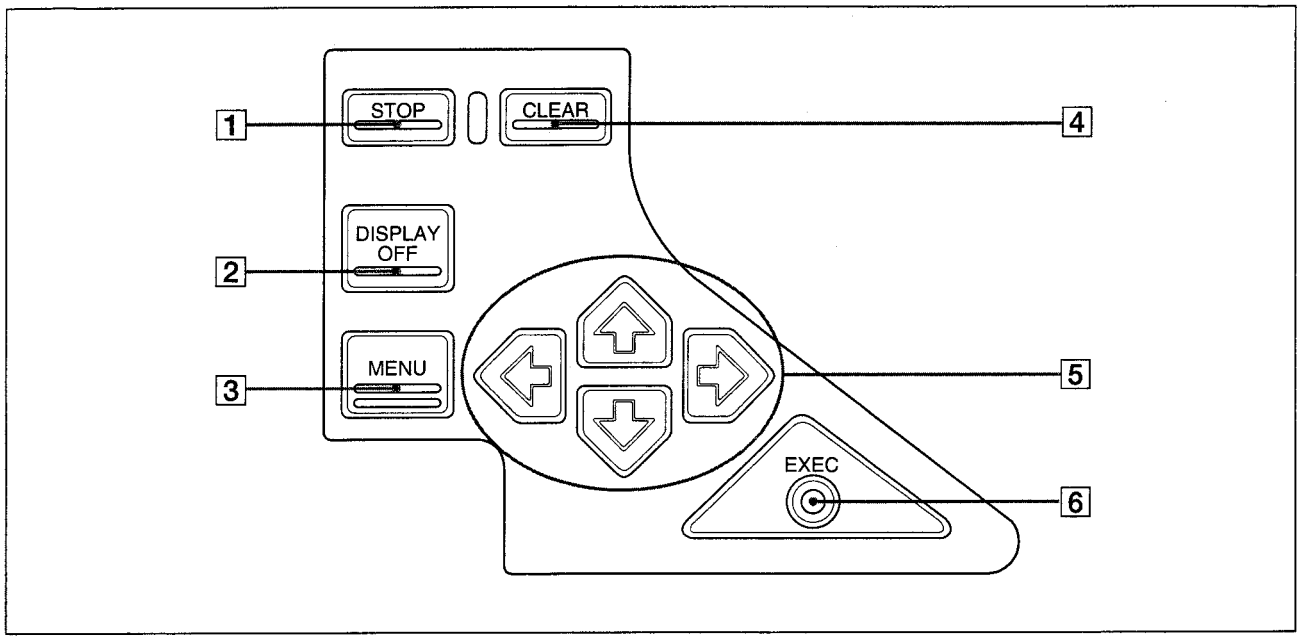
ⓐ **Sub panel keys**
For details, see "Sub Panel"

ⓑ **Ink ribbon cartridge (8, 50)**
Insert the ink ribbon cartridge.

ⓒ **Paper cover (49, 50)**
Paper is ejected onto this cover.

ⓓ **Paper tray (11, 49, 50)**
Load paper into this tray.

Sub Panel



1 STOP button (17)
Press to stop printing midway. By pressing this button, the current printing complete and printing after this is cancelled.

2 DISPLAY OFF (17, 70)
When the menu is displayed, pressing this button temporarily clears the menu display. While this button is held down, the menu display disappears.
When the regular screen is displayed, pressing this button toggles on and off of the screen display (such as messages, Q1, A and similar) regardless of setting of the item of DISPLAY on the OUTPUT SETUP menu

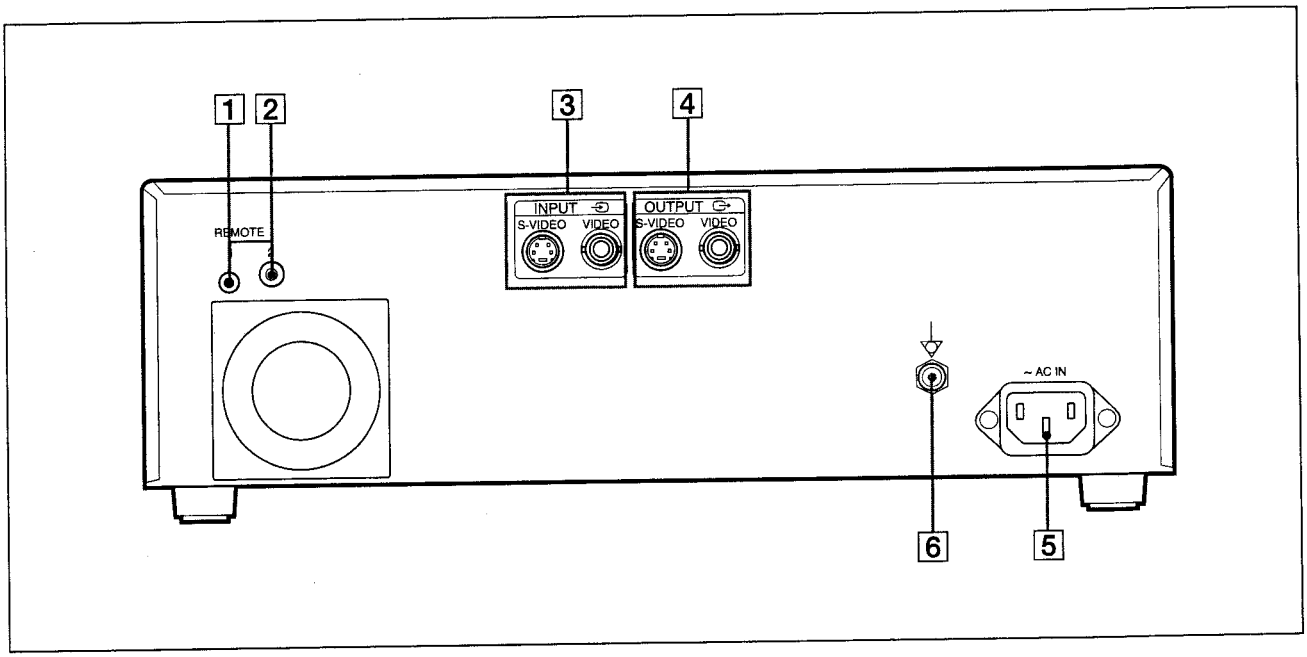
3 MENU button
Press this button to display or clear the menus on the screen and printer window displays.

4 CLEAR button (47, 48)
Press this button to clear the images captured in the memory pages. Which images that can be cleared with the CLEAR button depends on the setting made with the FUNCTION SETUP menu.

5 Cursor keys
Use to select a desired item from the menu by pressing the ⇧ or ⇩ button and set the value by pressing the ⇦ or ⇨ button.
Also, these keys are used to position the cursor (green) on the regular screen.

6 EXEC button (41, 42, 43, 44)
Press this button to enter the characters of a caption.

Rear



1 REMOTE 1 connector (special mini jack) (55)

Used to connect the RM-5500 Remote Control Unit (not supplied) to be used as wired remote control unit.

2 REMOTE 2 connector (stereo mini jack) (55, 76)

Used to connect the RM-91 Remote Control Unit (not supplied), the FS-20 or FS-36 Foot Switch. Or input remote control pulse signals for automatic printing.

3 INPUT (input signal) connectors (53)

Used to connect the video equipment supplying the source image.

Connector	Connectable equipment
S-VIDEO	Video equipment with Y/C separated output connector.
VIDEO	Video equipment with composite video signal output connector

Refer to "Important safeguards/notices for use in the medical environments" on page 2.

4 OUTPUT connectors (54)

Used to connect the video monitor.

Connector	Connectable equipment
S-VIDEO	Video equipment with Y/C separated input connector.
VIDEO	Video equipment with composite video signal input connector

Refer to "Important safeguards/notices for use in the medical environments" on page 2.

5 ~ AC IN connector

Used to connect the printer to a wall outlet with the supplied power cord.

6 Equipotential ground terminal connector ⏚

Used to connect to the equipotential plug to bring the various parts of a system to the same potential.

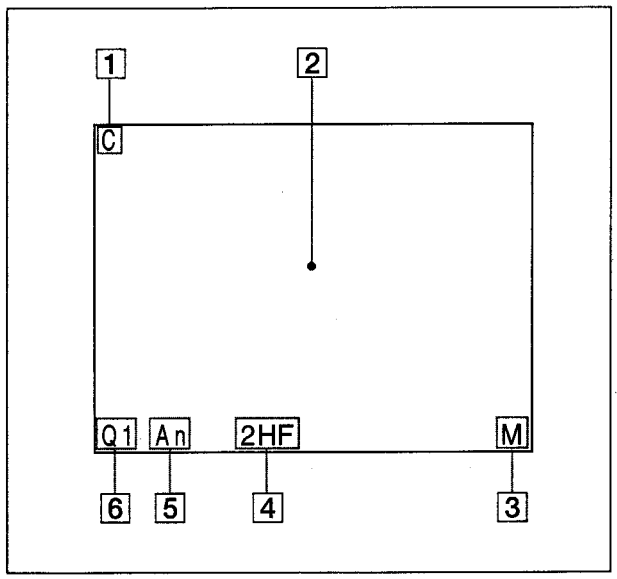
Refer to "Important safeguards/notices for use in the medical environment" on page 2.

Monitor Display

There are two types of display: the regular screen display and menu screen display. The two types of display are explained using the monitor display.

Regular screen display

When you first turn on the printer, the regular screen message appears.



1 C (Caption) display section

C is displayed in white when the printer is set to print a caption consisting of the date and/or comments.

2 Message display section

Messages are displayed.

3 S or M (image type) display section

This indicates the type of image being displayed on the monitor screen.
S (Source): The image from the input signal source is displayed on the screen.
M (Memory): The image stored in memory is displayed on the screen.

4 Printer operation mode display section

Display	Meaning
1, 2H, 4, 16	Indicates the printout type in STANDARD made.
DUP1, DUP4, DUP16	Indicates the duplicate mode in which full-or identical four- or 16-reduced images are printed in one paper in DUPLICATE mode.

a) When the SEPARATE (image with the white borders) is set to ON, F is attached. For example, 4F.

5 Memory page display section

Indicates the currently selected memory page. While the image in the memory page is being printed, the memory page indication blinks. The memory page whose memory image is queued to be printed lights in green.

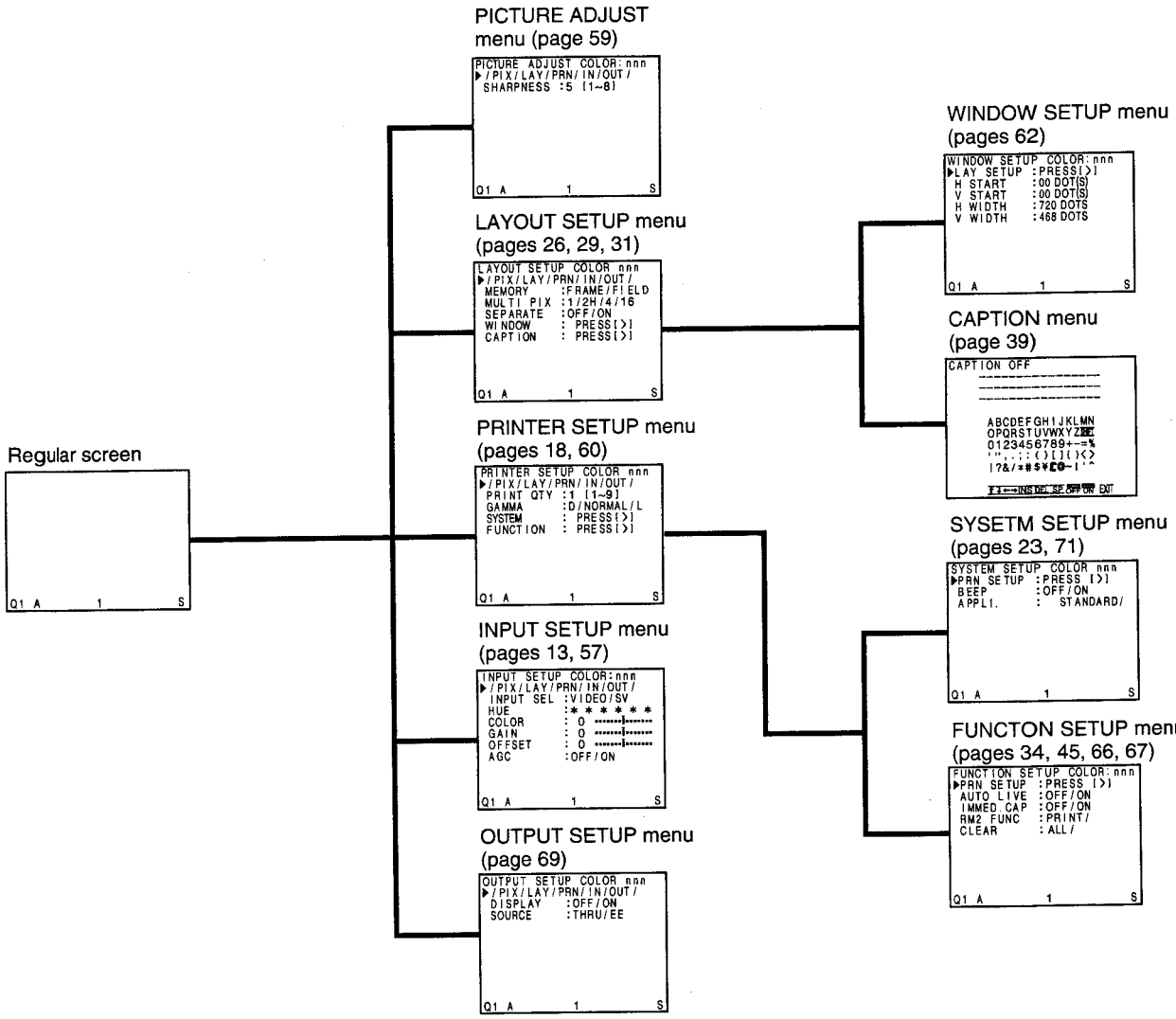
6 Q (print quantity) display

Indicates the number of copies to be printed. This item blinks while the printer is busy.

Menu screen

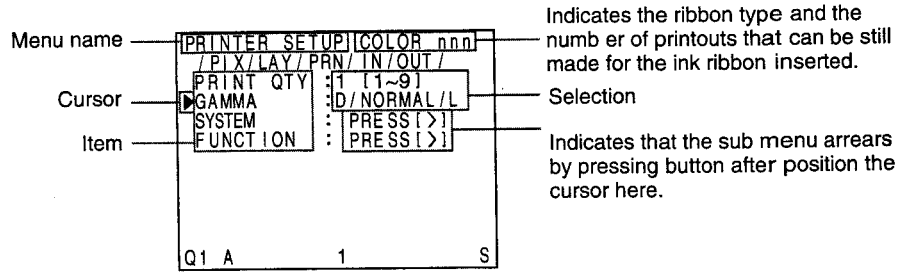
Menu screen tree chart

The menu screen configuration is shown using the tree-chart. For details, refer to the pages indicated in ( ).



Menu screen display

Example: SYSTEM SETUP menu screen



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